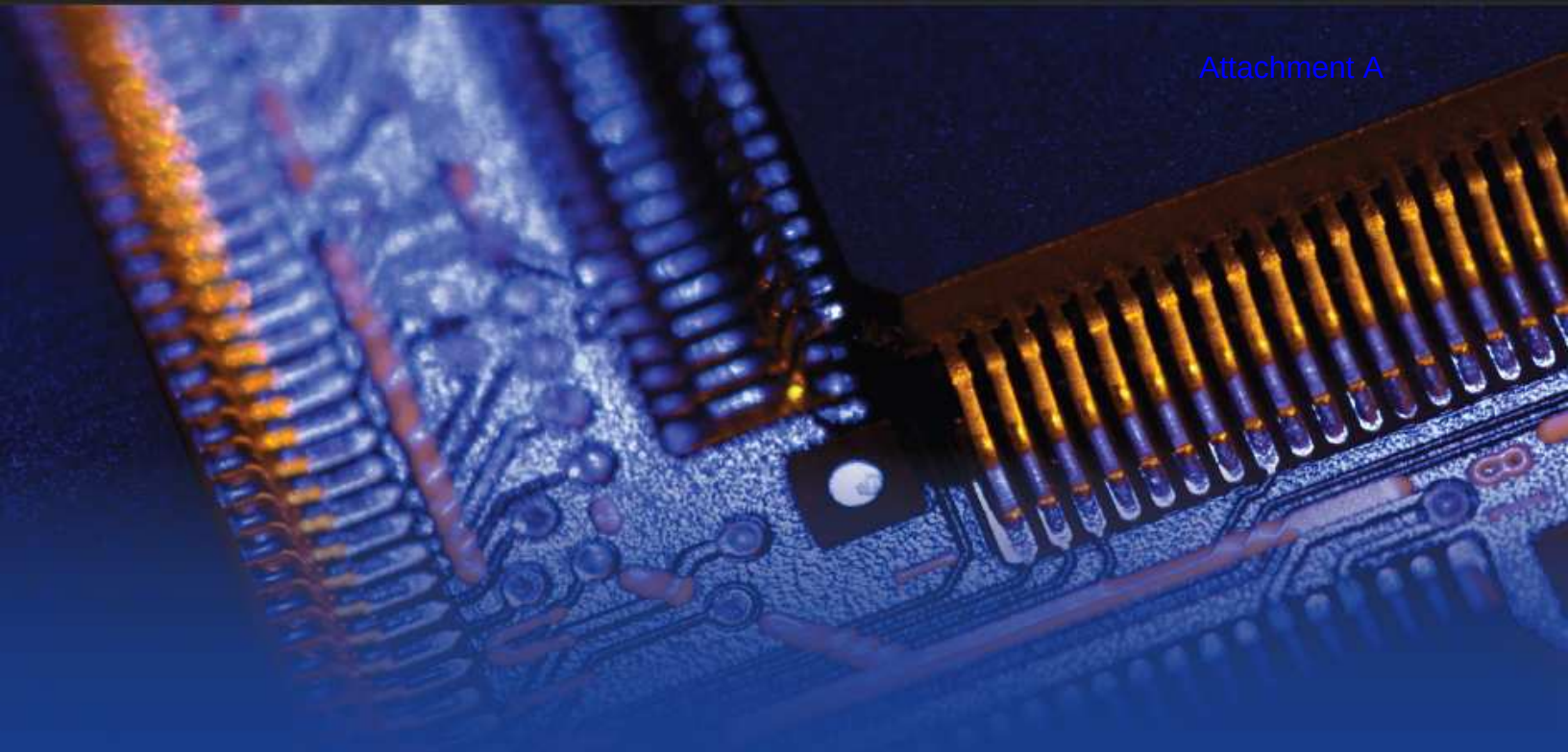

IT Strategic Plan

Fiscal Year 2012-2016

DRAFT

City of Rockville
Get Into It

City of Rockville
Department of Information Technology

[Inside cover page]

IT Strategic Plan
Fiscal Year 2012 – 2016

Prepared by

Michael Q. Cannon
Chief Information Officer

Douglas E. Breisch
Telecommunications & IT Operations Manager

Mayor and Council
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John Britton, Council Member
Piotr Gajewski, Council Member
Bridget Donnell Newton, Council Member
Mark Pierzchala, Council Member

Appointed Staff
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IT STRATEGIC PLAN FY 2012 – 2016
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MESSAGE FROM THE CITY MANAGER

The City of Rockville strives to provide exceptional services and a high quality of life, while maintaining customer service that exceeds expectations. Success depends in part on information technology tools that are up-to date, high quality and appropriate to a city of our size and complexity. Success also depends on effective planning and investment of resources. This strategic plan will guide our work to acquire and maintain information technology that meets residents' needs and supports employees.

Rockville residents, other external customers and employees rely on the City's information technology daily. Residents use technology tools such as the website and phone system to communicate with the City. They rely on additional tools to pay bills and obtain permits. Other information technology impacts customers' functions "behind the scenes." For example, City staff cannot serve customers without an effective financial system or functioning PCs. The quality of our technology even impacts our ability to recruit the best employees.

We recognize that preparing the strategic plan is just one step toward meeting customer needs. Significant work is ahead to secure funds and to implement the plan. The Department of Information Technology will lead the implementation with significant involvement and time commitment from employees in all departments. Implementation will involve assessing specific needs, researching advancements in technology, identifying the most appropriate technology solutions for Rockville, implementing or upgrading the technology and training employees.

Rockville successfully implemented the information technology strategic plan developed in 2001 and looks forward to the improvements to come over the next 10 years. Our goal in implementing this strategic plan is to improve efficiency, increase service quality and expand the tools available to internal and external customers. This plan is a step toward an exciting information technology future for Rockville.

IT STRATEGIC PLAN FY 2012 – 2016
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MESSAGE FROM THE CHIEF INFORMATION OFFICER

I am proud to present the City's second IT strategic plan. Having been directly involved in the development of both the original plan and this plan, I can clearly see how much the City has advanced and will advance technologically. Unlike the first plan, which was IT Department focused, this five-year plan establishes the roadmap for the entire City to follow, with the IT Department as a significant component. In the challenging economic times we are in, the plan projects that each department's needs will grow significantly over the next five years, and it will be important for the City to prioritize and fund the objectives and projects contained herein. These investments will not only improve the delivery of services to citizens and the public, but also will allow employees to work more effectively, efficiently and collaboratively.

While the development of the plan is significant, implementing the recommendations will take a tremendous effort on the part of our highly talented IT and City staff. Many major projects will emerge from this plan, and these will need to be carefully managed and tracked throughout their lifecycle.

It is important to keep in mind that this plan is a roadmap that relies on forecasts and assumptions that may change in the future. It will be important to revisit the goals, objectives and projects on no less than an annual basis and make adjustments as warranted.

The development of this plan would not have been possible without the work, input and review of the many people and groups listed on the acknowledgement pages. I am grateful for their expertise, insights, suggestions and opinions. Likewise, I am grateful for the direction and support of Scott Ullery, City Manager, department heads, and the Mayor and Council, all of whom have recognized the importance of information technology to the successful achievement of the City's goals.

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ACKNOWLEDGEMENTS

Executive Committee

Jennifer Kimball, Assistant City Manager
Michael Q. Cannon, Chief Information Officer
Douglas E. Breisch, Telecommunications & IT Operations Manager
Michelle Poché Flaherty, Organizational Development Manager

Executive Steering Committee

Jennifer Kimball (Chair), City Manager's Office
Brenda Bean, City Clerk's Office
Michelle Bean, Recreation and Parks Department
Douglas E. Breisch, Information Technology Department
Michael Q. Cannon, Information Technology Department
Judy Ding, Public Works Department
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Bobby Ray, Community Planning and Development Services Department
Carlos Vargas, Human Resources Department

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IT STRATEGIC PLAN FY 2012 – 2016
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Jennifer Kimball, Assistant City Manager
Marylou Berg, Communications Manager
Gavin Cohen, Chief Financial Officer
Michael Q. Cannon, Chief Information Officer
Michelle Poche Flaherty, Organizational Development Manager
Burton R. Hall, Director, Recreation and Parks
Linda Moran, Assistant to the City Manager
Craig Simoneau, Director, Public Works
Susan Swift, Director, Community Planning and Development Services
Terrance N. Treschuk, Chief of Police
Carlos Vargas, Chief Human Resources Officer
(Claire Funkhouser, former City Clerk)

Focus Groups

City Clerk's Office and City Attorney's Office
City Manager's Office
Community Planning & Development Services
Finance
Human Resources
Information Technology
Police
Public Works, City Hall
Public Works, Gude Drive Facility
Recreation and Parks, City Hall
Recreation and Parks, Off-Site
RockNet

Draft Document Formatting

Janet Hare, Information Technology Department

Draft Document Cover Design

Sylvia England, Graphics and Printing Division

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EXECUTIVE SUMMARY

[Divider Page. Graphics to be added in final document.]

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EXECUTIVE SUMMARY

This five-year IT Strategic Plan sets forth a road map for the City of Rockville based on extensive input from City staff; research conducted by IT staff and others in the IT field; input from a group of residents who oversee Rocknet, a community online network; preliminary input from the Mayor and Council; and extensive discussions with senior management.

It identifies the organization's current IT needs and, to the extent possible, anticipates future IT needs. The plan lays out the means and steps necessary to meet those needs and the strategy to ensure the City's IT resources support the delivery of high quality services to internal and external customers.

It is based on the premise that the City provides proven, leading-edge information technology tools that enhance service quality, efficiency and quality of life. It focuses on benefiting both internal and external customers through improved support, tools and service delivery.

The plan specifies ways to take advantage of exciting developments in information technology to improve efficiency, effectiveness, responsiveness, transparency and accessibility. It also includes tools to help city government better analyze information and make decisions

The estimated total cost to implement the plan from FY12 through FY16 is $6.6 million. There are one-time and recurring costs included in the totals. Some of the costs span more than one fiscal year because of the nature of particular initiatives and because of recurring costs. The costs are presented by goals and objectives on pages 69-72 and by fiscal year on pages 74-75.

The time frames for strategic initiatives were prioritized taking into account the results of the employee survey and focus groups; the IT staff retreat and analysis; costs; budget priorities and limits; age or absence of hardware, software and policies/procedures; length of time needed for investigation, analysis and implementation; and staff and other resource availability. In short, the schedule for the strategic initiatives reflects their relative priority.

The plan is based on an overarching vision of the City's information technology within five years. Goals, objectives and strategic initiatives define how the City will achieve the vision. A set of guiding principles is provided to guide decision-making.

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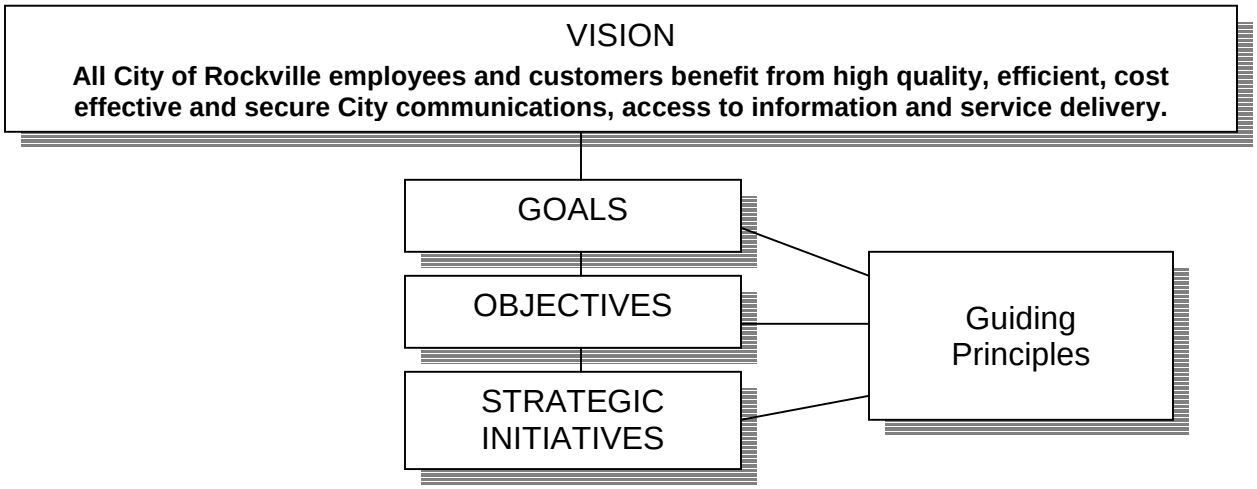

Goals, Objectives and Strategic Initiatives

The *goals* identify the City's main areas of focus for information technology, and they indicate the results that the City needs to achieve.

The *objectives* are tied to the goals and identify the activities or action steps needed to obtain the results envisioned by the goals. Some objectives support more than one goal. They are action statements that clarify how the organization will implement the strategy.

Strategic initiatives, which break down the objectives into their more specific parts and activities, are identified in the body of the plan and the tables outlining costs and timelines (pages 69-75).

Goal 1: Communication and Collaboration

Employees and customers have access to proven, leading-edge City information technology that enhances communication and collaboration.

Objectives:

1.a. Enhance Multiple Channels of Communication and Collaboration

1.b. Enhance Mobile Computing Communication Systems

Examples of Strategic Initiatives

- Expand the use of the Web to enhance two-way communication with customers and the public
- Further utilize social networking for communication with customers and the public
- Employ technologies to enhance public interaction at City meetings
- Increase remote access for employees, especially during emergencies, by expanding the use of the virtual private network

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Goal 2: IT Department Consulting Service

The Department of Information Technology provides technical and strategic leadership and consultation to City departments.

Objectives:

2.a. Improve IT Best Practices

2.b. Prepare for the Future through Research and Development

Examples of Strategic Initiatives

- Establish IT consulting services to work with departments
- Develop a process for on-going and special projects research
- Educate employees on new and emerging technologies
- Identify technologies to facilitate communication between departments and citizens

Goal 3: IT Infrastructure

The IT infrastructure is enhanced and supported to provide the tools and resources for information technology to operate efficiently and effectively.

Objectives:

3.a. Enhance the Institutional Network and Internet Connectivity

3.b. Enhance and Expand Hardware and Software Infrastructure

Examples of Strategic Initiatives

- Deploy fiber optic connectivity to remaining institutional network sites
- Upgrade the network backbone from 1 Gb to 10 Gb
- Increase Internet bandwidth
- Expand centralized storage capacity
- Expand the backup recovery site and provide a second one using the "Cloud"
- Expand use of server and desktop virtualization

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Goal 4: Information and Document Management

Employees and customers have access to City-based technology systems that facilitate storage, retrieval, analysis and reporting of City information.

Objective:

4.a. Enhance Data and Document Storage, Retrieval, Organization, Sharing and Access

4.b. Use Data to Improve Analysis and Decision Making

Examples of Strategic Initiatives

- Make commonly requested data available to the public in an industry-standard interactive format
- Use business intelligence software to improve analysis and decision-making
- Use a document imaging and management system to improve efficiency of document storage, organization and access

Goal 5: Software Integration and Interaction

Software systems are integrated, adaptable and user friendly, and they support efficient and effective business processes and service delivery.

Objective:

5.a. Increase and enhance effective and efficient delivery of integrated quality services for internal and external users.

Examples of Strategic Initiatives

- Implement and migrate legacy enterprise software applications to a single enterprise (or ERP) solution where practicable, including finance, budgeting, utility billing, permitting, code enforcement, licensing, human resources, payroll, inventory, purchasing
- Add utility billing, employee and vendor self-service, and budgeting modules
- Purchase an asset management system that integrates with geographic information systems and other enterprise software
- Evaluate implementing a customer relationship management system as part of the enterprise system

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Goal 6: Prioritization and Funding of Information Technology

Information technology solutions are high priorities for the organization and are funded, acquired, developed and implemented in a timely and cost-effective manner.

Objectives:

6.a. Develop Citywide Best Practices for Prioritizing and Funding IT Solutions and Projects

6.b. Improve IT Budgeting and Purchasing Processes

Examples of Strategic Initiatives

- Develop processes and criteria for prioritizing IT Capital Improvement Program projects and Operating Budget items
- Develop a policy identifying information technology as an organization priority for enhancing service delivery and efficiency and effectiveness of operations
- Develop a process for departments to partner with the IT department for investigation, purchase and deployment of technology
- Communicate technology priorities and needs with City staff and the public

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Goal 7: Training

City employees are provided the training necessary to increase the organization's technological competency and productivity. Technology staff is provided the training and resources necessary to support and enhance information technology

Objective:

7.a. Increase Technical Proficiency and Expertise

Examples of Strategic Initiatives

- Develop an end user technology training program
- Provide ongoing training opportunities for IT technical staff
- Provide a comprehensive program for delivering training by various means, in various locations, and various manners of instruction
- Provide increasingly sophisticated training so technology is used to its full capacity

Conclusion

In these challenging economic times it is imperative that information technology is a priority element in meeting the City's needs and goals, and that it is funded appropriately. This plan provides a vision and roadmap for the coordinated development and enhancement of the City's technology over the next five years.

It provides practical guidance for responsible decision-making and resource management. It focuses on the entire organization, and its development has included input from staff at various levels throughout the organization. Because of its organization-wide scope, it also supports cooperative partnerships between departments.

While this plan provides a roadmap for FY12-16, work began in FY11 using funds approved by the Mayor and Council to:

- Install wireless Internet access at several City facilities
- Implement a talent management system
- Secure an outside expert to examine the City's document imaging and management needs and to propose a solution.
- Implement a full digital conversion and tapeless workflow for Rockville 11
- Upgrade Microsoft Office to Office 2010 and provide staff training
- Upgrade the City's main data center cooling and electrical infrastructure

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A critical step is to provide funding in the FY12 budget for those strategic initiatives identified as first-year priorities. The IT staff will begin implementing those FY12 objectives and strategic initiatives for which funding is not required.

In the 10 years since the City began to implement its first IT Strategic Plan, a great deal has been accomplished in using technology to improve citizen access to government information and to increase employee efficiency and effectiveness in delivering superior services. In the next five years, the City faces a new set of challenges and expectations. Using this plan as a roadmap, the City has the opportunity to use a new generation of technology and new ways of doing business to meet those challenges.

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INTRODUCTION

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INTRODUCTION

This is the second Information Technology Strategic Plan developed for the City of Rockville. The first plan in 2001 was one of the first major projects of the newly formed Information Technology (IT) Department and its first director.

2001 Plan Accomplishments

The 2001 plan was the springboard for a number of significant accomplishments that have improved citizen access to government information; increased employee productivity, efficiency and effectiveness; and helped the City enhance the delivery of superior services. Among these accomplishments are the following:

- Implemented an institutional network (I-Net) of fiber optic cable linking all key City facilities and enabling high-speed, high capacity data, voice and video communications amongst staff and with the public
- Implemented a new City-wide Voice Over Internet Protocol (VOIP) telephone system that has saved the City $150,000 annually
- Updated and expanded the City's geographic information system (GIS) map library to include more than 200 map layers of information
- Audited and enhanced the security features of the IT infrastructure
- Developed the technical and creative aspects of the City's website to enhance communication and participation in city government
- Standardized computer hardware and software and implemented a cost-saving, regularly scheduled, rotating replacement program
- Supported the implementation of an 800MHz mobile voice system and 3g mobile data system to enhance public safety services
- Provided Internet access to public computer labs in recreation facilities
- Provided mobile computing capacity for inspectors and other key staff working away from their offices
- Implemented video on demand for the City's website using the resources of the City's cable television channel
- Developed training and capacity for teleworking by some City staff to help reduce demands on City Hall space and to help reduce traffic congestion
- Developed and implemented online recreation program registration and other e-commerce applications to make it easier and more convenient for residents and businesses to do business with the City

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The Current and Near Future Environment

In early 2009, with some of the previous plan's infrastructure beginning to age, with information and communication technology changing more rapidly, and with the needs of citizens and City staff developing as rapidly, the development of a new IT strategic plan became an organizational priority.

From initial impressions and through research and analysis, a few things have become clear, and they have been factors in driving the need for a new plan and helping to shape the plan's content:

- The way government does business and interacts with its citizens is changing, and information technology will play a key role in those changes
- This is an exciting and challenging time in which technology is both driving and being driven by changes in the way people live their lives and share information. Wireless technology and social networking, to name just a couple, are creating new opportunities
- Smartphones and mobile computing are becoming dominant forces. By 2015, the majority of Web pages viewed will be through these devices. It is incumbent on governments to adapt to this paradigm shift and offer smartphone and mobile device friendly access to information through the Web and other applications
- There is an increasing need for organization-wide ("enterprise") IT solutions that are integrated to improve the way the City serves citizens and businesses
- Many larger technology infrastructure improvements are long-term investments and require careful planning and research before they are implemented
- The role of the IT Department will need to expand to include not only expert care of the IT infrastructure and applications, but, also, to take on a more proactive consulting, facilitating and leadership role. This new role involves understanding and interpreting needs, communicating information technology needs and possibilities, developing and improving business processes, and finding and coordinating appropriate solutions
- Departments and users will need to be more proactive and timely in communicating their needs, desires and new developments in technology in their disciplines to the IT Department. IT will need to play a more consultative role with departments to facilitate two-way and multi-way communication among stakeholders
- Technology is changing rapidly, and many technologies that may be in use in five years have not been developed or invented

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- In these challenging economic times, IT departments are embracing Cloud-based, open source and virtualized solutions. It appears these shifts will continue well into the future and will be long lasting
- Over the past 10 years, ongoing maintenance costs have been consuming an ever-larger share of IT budgets. As the IT industry shifts to "Cloud" and other application service provider models, recurring costs will be an even greater portion of budgets, although there also may be savings in capital costs associated with these technologies
- It is advantageous to seek out and deploy technology that adheres to open, vendor independent standards and to minimize proprietary solutions
- Cyber attacks are growing in number and in sophistication, and proactively protecting the City's information technologies is critical
- As employees are being asked to do more with the same or fewer resources, it is critical that the organization provides them with the IT tools they need to do their jobs
- Mergers and acquisitions of technology companies, including many providing products and services to local governments, are having a significant impact with less competition, fewer choices of products and rising prices

Just as clear are a number of challenges that are and will continue to face government, and local government in particular, as it works to provide information technology solutions for staff and the public:

- Major economic forces have created revenue constraints that are forecast to continue for several years
- Government processes, regulations and audit requirements do not always support flexibility, quick changes or selecting the most-favored new technology
- The needs and desires of staff, City departments and the public, as well as the way they use technology, are increasing and changing, sometimes at different rates
- Government needs to make sure the technology it employs for communication with the public is accessible to those who cannot afford the latest technology and those with disabilities
- Government cannot easily discard technology investments made with taxpayer money. Changing technologies requires demonstrating a clear need and showing the return on investment
- A balance needs to be struck between employing proven and leading-edge technology

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Plan Overview

This five-year strategic plan sets forth a road map for the City of Rockville that is based on research; extensive input from City staff, including IT staff; input from Rocknet, a resident-based community online network; preliminary input from the Mayor and Council; and extensive discussions with senior management.

It identifies the organization's current IT needs and, to the extent possible, anticipates future IT needs. The plan lays out the strategy and steps to meet those needs and to make the City's IT resources effective tools in delivering high quality services to internal and external customers.

Throughout, the plan also addresses or takes into consideration the trends, changes and challenges listed above. For example, it calls for changes in processes and procedures; it provides for use of the "Cloud" for certain technologies; it emphasizes the importance of working with smartphones; and it emphasizes the importance of prioritizing technology needs, including training for staff.

It is based on the premise that the City provides proven, leading-edge information technology tools that enhance service quality, efficiency and quality of life. It focuses on benefiting both internal and external customers through improved support, tools and service delivery.

The plan is based on an overarching vision of the City's information technology within five years. Goals, objectives and strategic initiatives define how the City will achieve the vision. A set of guiding principles is provided to guide decision-making.

The estimated total cost to implement the plan from FY12 through FY16 is $6.6 million. There are one-time and recurring costs included in the totals. Some of the costs span more than one fiscal year because of the nature of particular initiatives and because of recurring costs. The costs are presented by goals and objectives on pages 69-72 and by fiscal year on pages 74-75.

The time frames for strategic initiatives were prioritized taking into account the results of the employee survey and focus groups; the IT staff retreat and analysis; costs; budget priorities and limits; age or absence of hardware, software, and policies/procedures; length of time needed for investigation, analysis and implementation; and staff and other resource availability. In short, the schedule for the strategic initiatives reflects their relative priority.

This is an organization-wide plan. To make it a reality, will take commitment and support from elected officials, senior staff, the public, IT staff and technology users throughout the organization. The support will need to come in terms of priorities, dollars, policies and practices. Successful implementation may mean making compromises, and

it will mean exercising patience, taking an organization-wide perspective, and maintaining a continued focus on the vision, goals and principles of this plan. It will take cooperation, communication and flexibility to adapt to changing needs, technologies and resources.

Benefits to Citizens

The City's five-year Information Technology Strategic Plan may appear to have an internal focus on city government; however, the primary purpose is to help improve service delivery. Overall, Rockville citizens and businesses will benefit from the IT Strategic Plan through improved access to public information and services; more efficient, effective and responsive service; and more convenient and compatible choices for conducting business with the City.

The following chart summarizes some of the benefits that residents, businesses and other stakeholders will experience with implementation of the seven IT Strategic Plan Goals.

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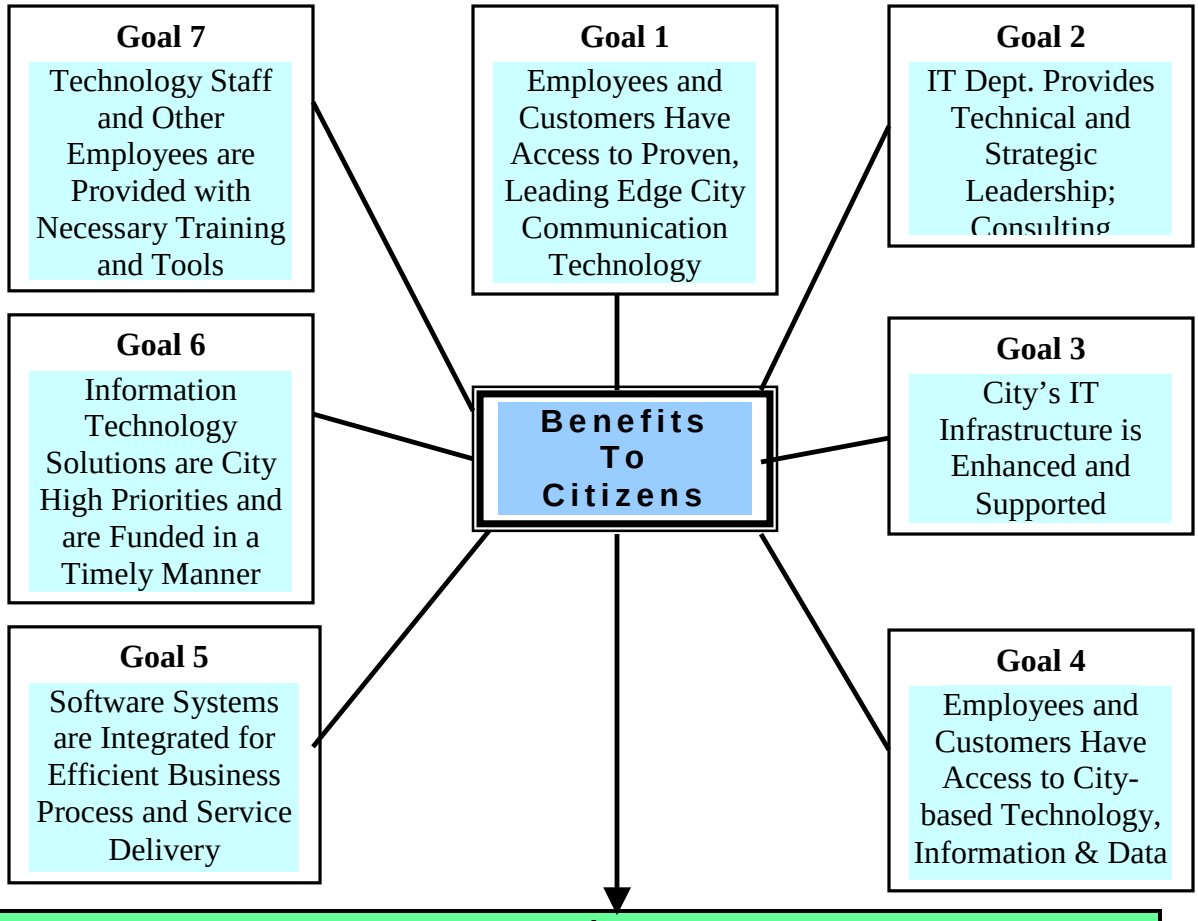
Benefits to Citizens



Results

All City of Rockville employees and customers benefit from high quality, efficient, cost effective and secure City communication, access to information and service delivery.

Examples

Communications and Citizen Participation	Government Efficiency and Effectiveness
– Expanded use of City website for two-way communication – Expanded use of social networking – Enhanced public interaction at City meetings – New ways to communicate with City via smartphones – Easier and quicker access to City information and data – Enhanced security of customer information	– Smart computing for water meters, traffic lights and data acquisition – Integrated and cross-communicating systems and applications – Electronic system for document management – Improve decision-making using business intelligence solutions for analysis and reporting – Enhanced security and backup of City information, data and systems

STRATEGIC PLAN DEVELOPMENT & IT DEPARTMENT OVERVIEW

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STRATEGIC PLAN DEVELOPMENT

Project Management

The City Manager assigned the Chief Information Officer (CIO) to be the project manager for the development and implementation of the IT Strategic Plan. He further created an executive committee to support the CIO, act as a sounding board, provide advice, help with coordination and facilitate communication with the City Manager and employees. This group was composed of the CIO, the Assistant City Manager, the Telecommunications and IT Operations Manager and the Organization Development Manager.

The project manager and other members of the executive committee researched other IT strategic plans and documents that provided advice on developing an IT strategic plan.

An executive steering committee was formed, composed of one representative of each department to act as an additional sounding board and provide feedback on key elements of the plan. A consultant provided additional advice and feedback as the plan was developed.

Project Charter

A project charter defined the project's nature, scope, purpose and objectives; identified key players and their roles; and served as the guiding document for the development of the strategic plan. The City Manager approved the charter.

Research

Research for the strategic plan included the following components:

Employee Survey:
• Electronic • Employees with e-mail account

Focus Groups:
• Employees • Citizens via RockNet Board • IT Staff Retreat • Outreach to senior staff including department directors

Technical Research:
• IT staff-developed white papers • Subscriptions to Forrester Research, Inc., Norex, and InfoTech Research Group • Public Technology Institute membership • IT staff general and topical research

Employee Survey

An anonymous online survey composed of closed- and open-ended questions was made available to the 407 City employees with individual e-mail accounts; i.e., those

employees who are most likely to use information technology tools. Of the 407 employees who received the survey:

- 306 viewed it
- 217 started taking it
- 167 completed it (41 percent response rate)

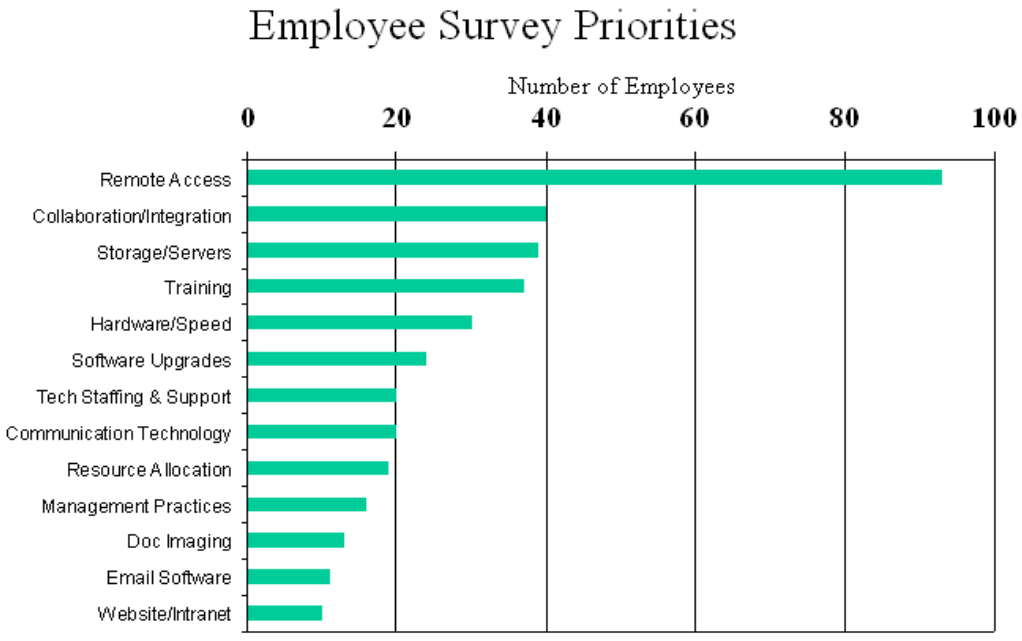
Among the results of the survey's open-ended questions were the following:

- Remote access to files was the most desired technology capability to help employees better do their jobs

  Note: Increased remote access began in FY10 after the survey results were received, and improvements are an on-going strategic initiative under Goal 1, Objective 1.a of this strategic plan.

- Data storage/server/space and document management were the things that could most help respondents improve the efficiency of workflow
- Limited resources was identified as the biggest challenge for respondents in providing their services over the next five years
- Communication was seen by respondents as the best opportunity to improve their service over the next five years

The graph below illustrates the highest priorities for improvements based on responses to the four open-ended questions.



Note for the graph above: Because of the open-ended nature of the questions, there was a variety of responses. Efforts were made to group similar subject responses as much as possible.

- The most important aspects of technology at work for respondents were the following, in descending order of importance:
  - Having technology that's been proven
  - Facilitates the employee's research
  - Having the latest technology
  - Technology that keeps the employee in touch with work/coworkers
  - Training
  - Compatibility with technology used by customers, other governments
  - Compatibility with technology the employee uses at home
  - Customer support availability beyond normal business hours

Note: Each possible aspect was rated on a scale of 1 (lowest importance) to 5 (highest importance). With one exception, the average rating for all aspects was 4.55 or higher. The exception was customer support availability for which the average response was 3.81.

Focus Groups

Individual discussions were conducted with each City department including members of the department's management team, as well as other department staff. These discussions consisted of an overview of the IT Strategic Plan purpose and process followed by a SWOT (Strengths, Weaknesses, Opportunities, Threats) discussion and analysis. The final section of the discussion was an open discussion from which IT management excused itself.

A similar discussion was conducted with residents from RockNet, a community online network partially supported by the City. The IT staff had a facilitated day-long retreat, which included not only a SWOT discussion, but, also, a discussion of ideas for

developing the strategic plan and for providing opportunities for IT staff input. It also included a brainstorming session on a wide-range of forward-looking matters related to technology, applications, infrastructure, workflow, services and policies.

The main points of each SWOT analysis were posted as they were discussed, and at the end of the discussion, the members of each group were asked to identify items that resonated most with them, although not necessarily their top priorities. Among the items identified the most from all focus groups were the following:

SWOT Analysis Key Results

Strengths	Weaknesses
▪ IT Help Desk and staff ▪ Kronos electronic timesheets ▪ Number of computers available ▪ Improvements in City website ▪ Internet access and fiber network infrastructure ▪ Remote access to voicemail ▪ Lotus Notes custom applications (e.g., egenda, CSRs, Project Tracking) ▪ IT communication to users ▪ Copy machines with scanning/pdf/fax capabilities	▪ Lack of 24/7 remote access to all systems and documents ▪ Lack of regularly scheduled mandatory training ▪ Document storage and management ▪ Legacy permit system ▪ Lack of user friendliness and features of current financial system ▪ Current e-mail system ▪ City website ▪ Inadequate IT staffing level
Opportunities	**Threats**
▪ 24/7 remote access to all systems and documents ▪ Employee self service ▪ Imaging system for document management ▪ Online training available 24/7	▪ Hard to attract tech-savvy employees if the City is not more cutting edge ▪ High expectations by people wanting information, service, response 24/7—technology is faster than bureaucracy

The following graph reflects the frequency that focus group participants identified various items as those that most resonated with them, regardless of whether prompted by a positive or negative comment.

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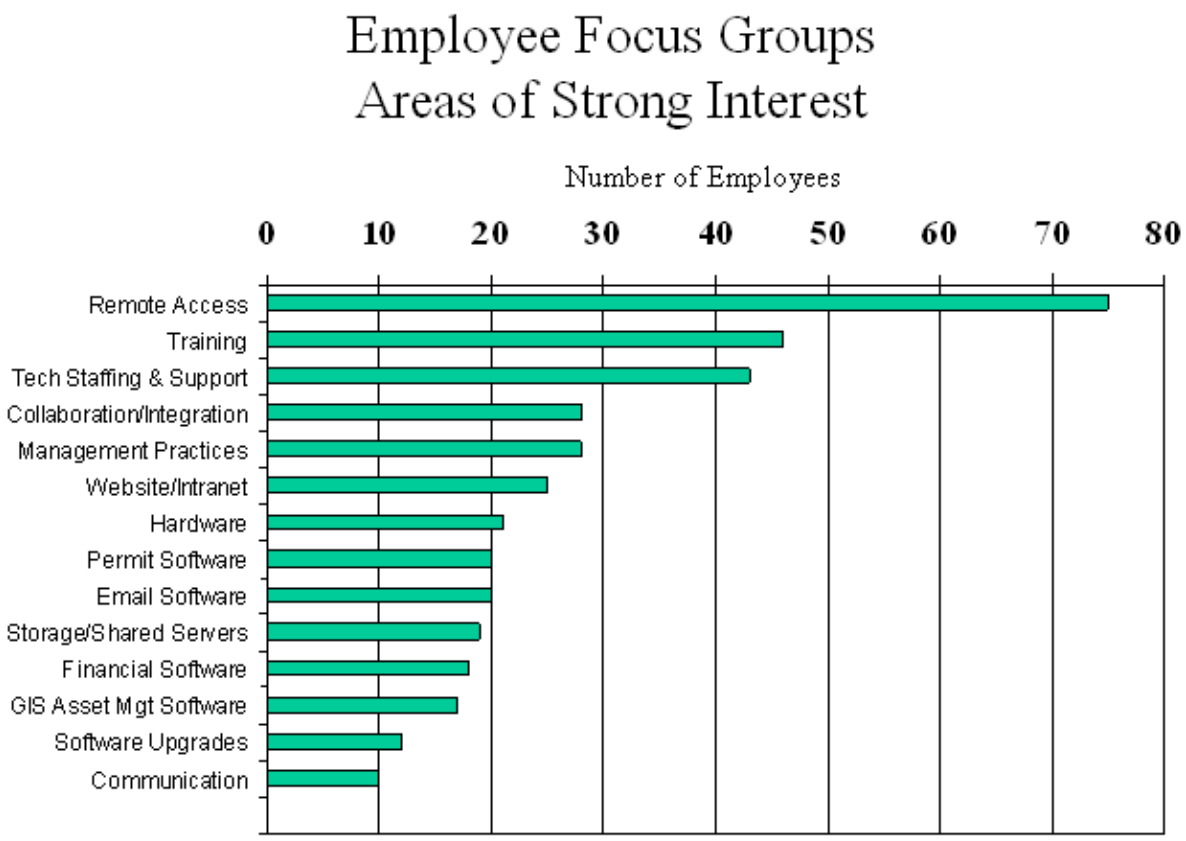

Technical Research

The IT staff conducted targeted research and wrote white papers on topics relevant to the City and its IT Strategic Plan. The white papers include the following topics:

- Document Imaging
- Hosted Messaging and Collaboration Services
- New Technology
- IT/Network Infrastructure Trends
- Virtualization in the Data Center
- Green Computing
- ERP Trends and Strategies for the Next 5 Years
- Mobile Computing
- Benefits of Utilizing Portable Devices

- VPN (Virtual Private Network)
- Social Networking
- Geographic Information Systems (GIS) Technology Trends
- Voice Communications Needs for the Future
- Political, Economic, and Operation Issues and Trends in Government

The City also purchased a one-year subscription to Forrester Research, Inc., a leading technology and marketing research firm focusing on "forward-thinking" practical matters. IT staff consulted Forrester's online information on several topics related to the staff's white papers; on other topics that arose throughout the course of the plan's development; and for thought-starters. Additional research sources included Norex and InfoTech Research Group, various websites, and staff communication with other jurisdictions.

The City also maintains a membership with the Public Technology Institute (PTI). Staff attends seminars on emerging trends in technology. IT staff also participates in PTI listservs and webinars, in the Maryland Municipal IT Managers Association (Maryland Municipal League), and in the Metro CIO group of the Metropolitan Washington Council of Governments.

Throughout their professional work and continuing education, IT staff members are continually reading articles, papers and books on a variety of IT topics, and these helped inform strategic plan discussions, white papers and decisions. Additionally, IT staff has participated in conferences, webinars and other training that also contributed to the body of research for the strategic plan.

IT staff reached out to department directors and department management staff to learn about their business practices, their management needs and developments in technology for their disciplines.

Discussions of the research results by the executive steering committee and senior staff further sifted, analyzed and synthesized the results while also illuminating and identifying strategies and items needing most immediate action.

IT Department Overview

The IT Department was created in 1998 in response to a growing interest and need for making technology a Citywide strategic focus. As shown in the City budget, the department has three "cost centers": IT Operations, Voice Communications and GIS Operations. Under the IT Operations umbrella, there are several areas of responsibility, including financial and human resources applications/systems; systems security; permit applications and systems; e-mail and collaboration applications and systems; networking engineering; PC and network support, and telecommunications.

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For the past several years, since beginning to keep track of service level information, the IT Department has maintained an "uptime" of 99.9 percent for mission critical systems and applications. Its PC and network support staff has a 98 percent "satisfied" or "very satisfied" rating on service surveys returned by clients.

The IT department operates and supports:

- An institutional network (primarily fiber-optic)
- More than 400 desktop computers
- 60 laptop computers
- 57 physical servers
- 25 virtual servers
- 41 network printers
- 21 portable devices
- A voice over internet protocol telephone system with 450 phones
- Internet connections
- A website
- An intranet
- Wi Fi sites at most City facilities
- Microsoft Windows and Office applications and systems
- Applications and systems for:
    - Police
    - Finance
    - Human Resources
    - Video on demand
    - E-mail
    - Electronic agendas
    - Permitting
    - GIS (Geographic Information System)
    - Records management
    - Citizen service requests
    - Recreation and Parks class registration
    - Golf course operations
    - Purchasing
    - Refuse
    - Systems security
    - Voter registration, and more

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The IT Department supports technology used by the Mayor and Council and all of the City Departments: City Manager; City Clerk; City Attorney; Community Planning and Development Services; Finance; Human Resources; Police; Public Works; and Recreation and Parks.

A younger and more tech-savvy generation of employees has been entering the City work force over the past 10 years. At the same time, the workforce has retained a strong core of seasoned and experienced workers, many of whom have had opportunities to learn and use newer technologies, but some of whom have not had these opportunities or taken advantage of them.

In general, Rockville residents are well-educated and active in their community and government; have relatively high average incomes; and make use of advanced technology in both their personal and work lives. They expect to be able to interact with and obtain services from their local government using the technology to which they are accustomed. At the same time, there are residents who do not have access to or familiarity with the latest technology, and they, too, expect to be able to interact with and receive services from their local government. From several indicators, Rockville residents expect their local government to use technology to operate effectively, efficiently, responsively and responsibly.

As a percent of the City's All Funds Operating Budget (omitting the debt service fund), the IT Department Budget has declined from 4.58 percent in FY01 to 3.57 percent in FY11. For the sake of consistency throughout the period of comparison, the Web and television budget amounts were included in the annual amount of the IT Department budget; although, in actuality, the Web operation and budget were moved to the City Manager's Office in FY08, and the television operation and budget were moved to the City Manager's Office in FY10.

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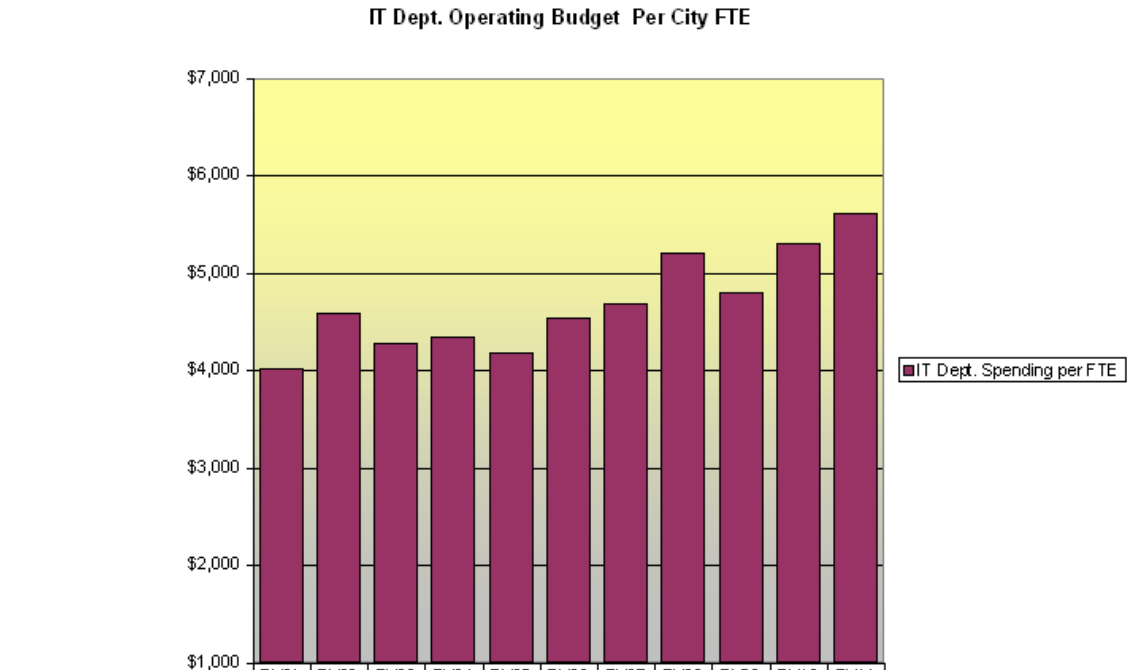
In terms of amount spent per full time equivalent (FTE) position in the City, the IT Department budget has increased from $4,015 in FY01 to $5,615 in FY11.



	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
FTE's (Regular and Temporary)	605.50	616.20	630.50	628.50	625.00	618.90	622.70	629.60	653.10	648.50	631.90
IT Dept. Spending per FTE	$4,015	$4,581	$4,270	$4,340	$4,179	$4,542	$4,688	$5,205	$4,796	$5,303	$5,615

For accurate comparison, data has been normalized to include Web and TV budgets; although, Web budget was moved to CMO in FY08 and TV budget was moved to CMO in FY10

When compared to Rockville's population, the IT Department budget reflected a decrease in per capita spending from $51 in FY01 to $49 in FY05. From FY05 through FY10 (the most recent year for which population estimates are available), the per capita IT Department spending increased from $49 to $55.

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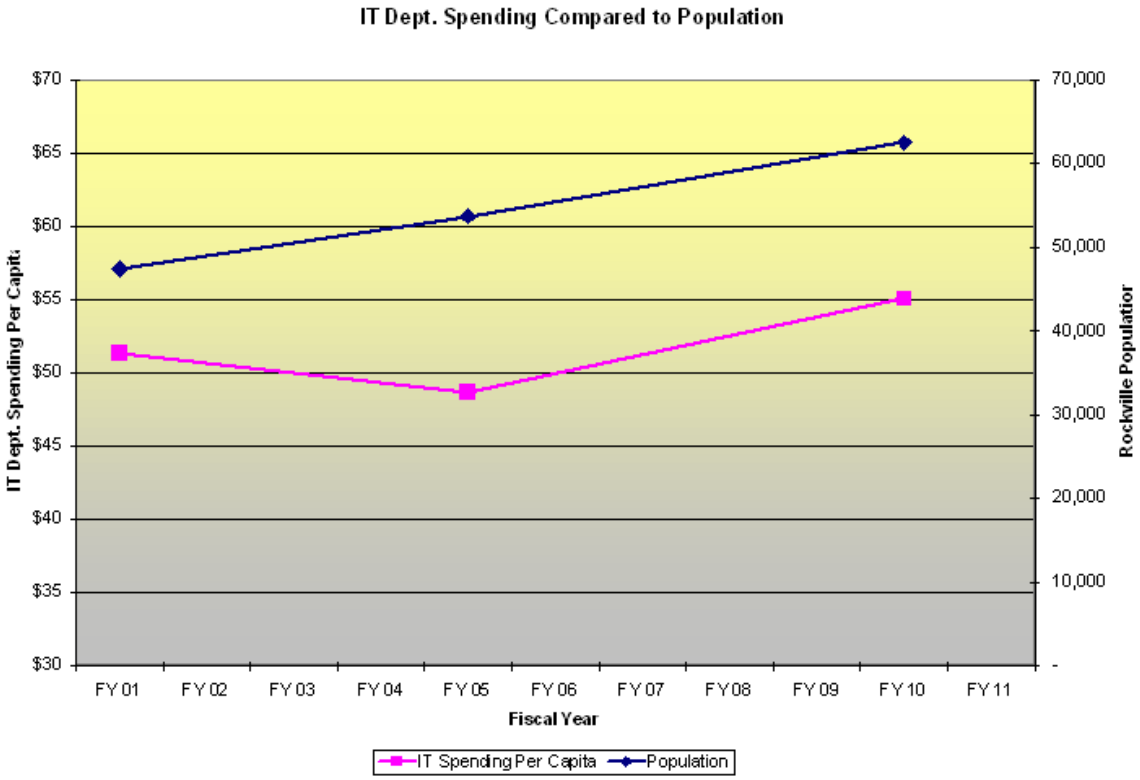

For accurate comparison, the data for IT Department spending has been normalized to include Web and TV budgets, which were moved to the CMO budget in FY08 and FY10 respectively.

The IT Department is responsible for providing services to more than 30 City facilities. At some facilities, the department provides a full array of services, among them, the institutional network (I-Net), network and PC support, help desk, e-mail, telephone, and file storage and backup. A key part of these services is maintenance, requests for assistance, repair, and enhancement. At some other sites, the services are fewer, such as providing and maintaining a voice telephone line or a telephone line for security alarm service.

The following map and accompanying list show the sites to which the IT Department provides services.

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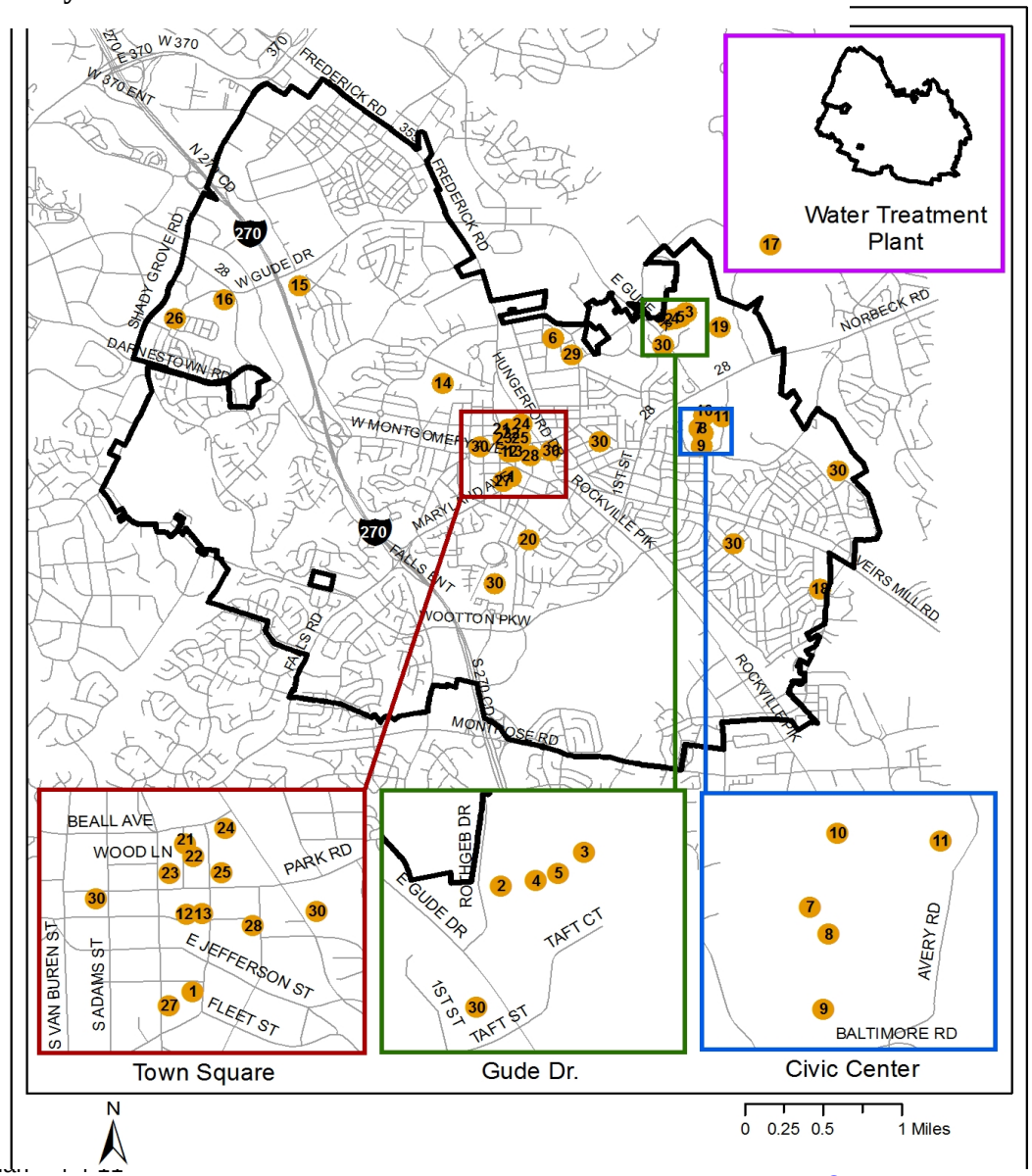
City Facilities to Which IT Services are Provided



1. City Hall
2. Gude Drive (Rothgeb) Maintenance Office
3. Gude Drive – Golf Maintenance
4. Gude Drive – Motor Vehicle Maintenance
5. Gude Drive – Stockroom
6. Lincoln Park Community Center
7. Glenview Mansion
8. Glenview Cottage
9. F. Scott Fitzgerald Theatre
10. Rec Services Building
11. Croyden Creek Nature Center
12. 20 Courthouse Square
13. 30 Courthouse Square
14. Swim and Fitness Center
15. Senior Center
16. Thomas Farm Community Center
17. Water Treatment Plant
18. Twinbrook Community Rec. Center
19. RedGate Golf Course
20. Elwood Smith Community Center
21. Arts and Innovations Center
22. Town Square stage and plaza
23. Town Square Parking Garage 1
24. Town Square Parking Garage 2
25. Town Square Parking Garage 3
26. Fallsgrove Multi-Model Ctr.
27. Graphics and Printing/Bouic House
28. Rockville Econ. Development Inc.
29. Lincoln Park Sub-station
30. Phone line/alarm service only: Metro Station elevator; Pump House, Beall Dawson House, Broome Concession, David Skull Rec., Dogwood Concession, and Rockcrest Rec.

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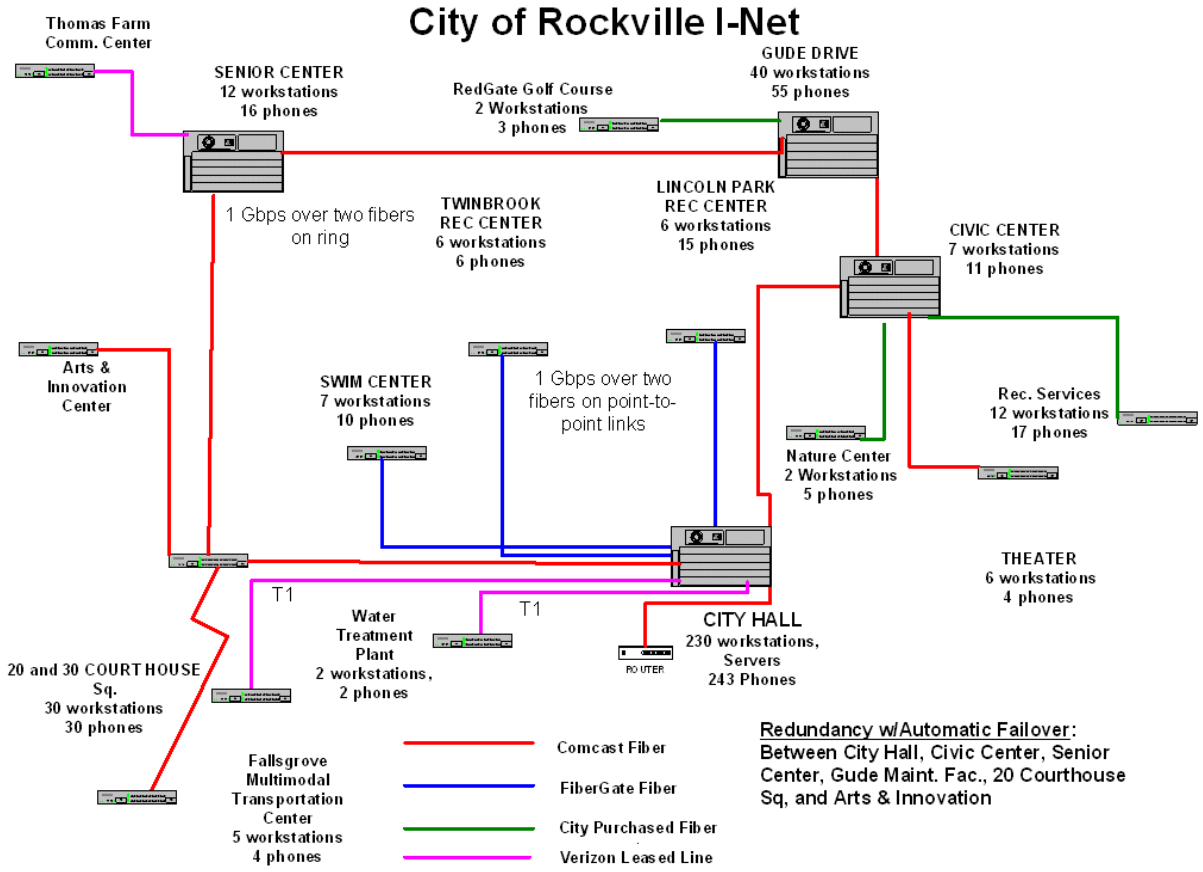
The IT Department has provided for and supports an institutional network (I-Net) connecting 19 City facilities with high-speed transmission of data, voice, and video. (See illustration below.)

Most of the I-Net infrastructure is fiber-optic cable, and most of that has been provided free of charge to the City through cable franchise agreements and rights-of-way use agreements negotiated by staff teams led by IT Department staff.

The initial part of the I-Net (consisting of City Hall, Civic Center, Gude Drive maintenance facility, Senior Center and 30 Courthouse Square) was conducted as a two-way ring, so if there is a cable cut or malfunction in one area, the network traffic can flow in the other direction without interruption of service. There is a "switch" and other equipment at each site to receive, route, and transmit the communications.

The I-Net has allowed the City to employ an advanced Voice over Internet Protocol (VoIP) telephone system that has eliminated the need for traditional phone lines between facilities, saving the City more than $150,000 a year.



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STRATEGIC ELEMENTS

PURPOSE

GUIDING PRINCIPLES

VISION

GOALS, OBJECTIVES AND STRATEGIC INITIATIVES

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STRATEGIC ELEMENTS

Purpose

The five-year IT Strategic Plan for the City of Rockville will serve as a roadmap for information technology acquisition, development, deployment, use, budgeting, work plans, maintenance and support.

This plan identifies the organization's current IT needs and, to the extent possible, anticipates future IT needs. This document lays out the activities and the costs necessary to implement the goals and objectives contained in the plan. The purpose of the plan is to move the City further ahead in high quality, efficient, cost-effective, and secure City communications, access to information and service delivery.

The plan will educate City staff about IT resources and emerging technologies, and will support efforts to incorporate technology developments and trends to meet the organization's needs. The goal is to provide IT resources in an orderly and efficient manner that results in efficient and effective work processes, service delivery, and communications. The plan focuses on the big picture and is realistic and flexible.

Guiding Principles

The following guiding principles were developed in concert with the goals and objectives to guide decision-making in the continual development of the City's information technology. They evolved from the City's first strategic plan as well as current research, employee input, public input, and IT staff white papers.

1. The City will deliver services and information over the Internet, cable television, wireless and other technologies utilizing a variety of approaches to inform citizens and foster input and participation. IT will maintain a network infrastructure with the appropriate bandwidth, speed and reliability to deliver these services and meet the needs of users.
2. City staff will have the necessary technologies and training to accomplish their mission and goals within resource constraints, and user input will be sought as appropriate when implementing new technologies.
3. Information sharing and collaboration between and within departments will be encouraged, and IT will provide expertise and guidance when supporting business process improvements.
4. IT will provide quality customer service to technology users and departments as defined by the City's customer service standards and tracked with performance measures.
5. Partnering opportunities will be pursued with both private and public sector organizations whenever possible.

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6. The City will pursue commercial-off-the-shelf (COTS) software applications, systems with open standards, and hosted or cloud-based systems where practicable with a bias toward proven technologies.
7. The City will strive to protect and secure information generated by and provided to the City.
8. The City will strive to follow an environmentally responsible approach in providing information technologies.
9. Departments will partner with IT during the investigation and consideration of hardware or software deployment. Procurement will be reviewed and approved by IT to ensure suitability, compatibility and standardization.
10. Consultants will be utilized for high complexity/low frequency tasks when practical.
11. Training for new information technologies will be provided to users and IT staff prior to their implementation.
12. A flexible approach and adaptable processes will be utilized to address the dynamically changing nature of information technology, and IT will strive to continually monitor and research new and emerging technologies focusing on how they can improve efficiencies and service delivery.
13. IT will aim to provide redundancy and resiliency when implementing mission-critical systems.
14. New technology to be acquired will comport with the City's current software standards, infrastructure and protocols so as to protect the City's investment and to facilitate interaction of systems and applications.

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Vision

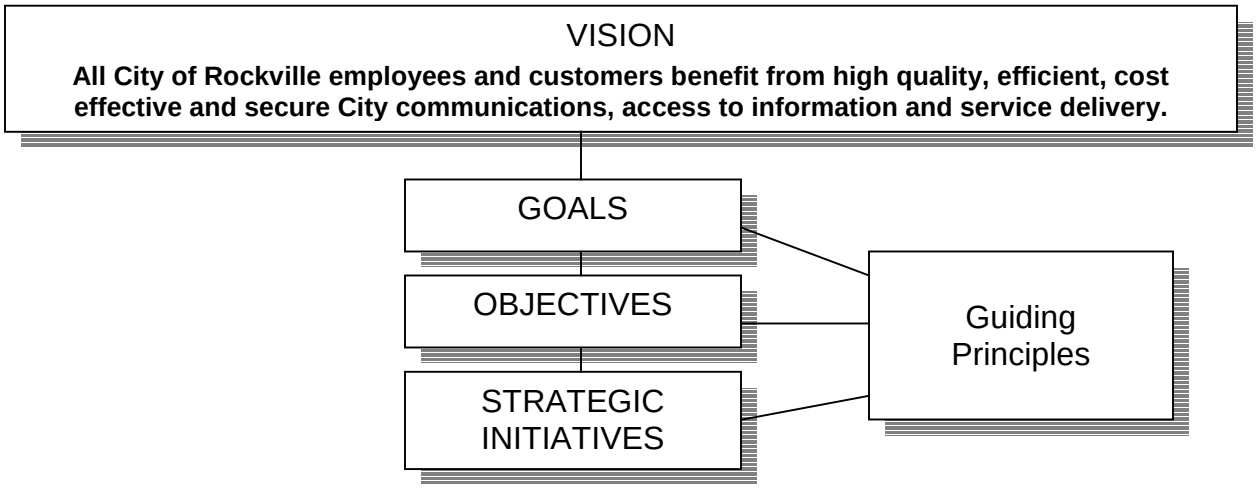
All City of Rockville employees and customers benefit from high quality, efficient, cost effective and secure City communications, access to information and service delivery.

Goals, Objectives and Strategic Initiatives

The *goals* identify the City's main areas of focus for information technology over the next five years, and they indicate the results that the City needs to achieve.

The *objectives* are tied to the goals and identify the activities or action steps needed to obtain the results envisioned by the goals. Some objectives support more than one goal.

Strategic initiatives break down the objectives into their more specific parts and activities.



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Goal 1. Communication and Collaboration

Employees and customers have access to proven, leading-edge City information technology that enhances communication and collaboration.

Reasoning: With leading-edge, yet proven technology, employees can more effectively and efficiently provide services and even expand those services. Much of this is based on enhanced communication between employees and between employees and customers.

External customers accustomed to up-to-date information technology at work or at home will find it easier and more efficient to communicate and do business with the City. Enabling customers to conduct their City business through the City's website can relieve a potential source of frustration, save phone calls and trips to City Hall, and provide 24/7 services and access to information. It also can reinforce the value they are getting for the taxes they pay.

At the same time, using *proven* technologies reduces problems, costs and staff time with implementing, using and maintaining them. Therefore, it is wise stewardship of limited resources.

Scope: Includes the hardware, software, and network systems used by employees and that are used to facilitate communication and interaction with customers.

Key components

- The Web, social networking sites, instant messaging, real simple syndication (RSS) and other emerging applications
- E-mail and electronic collaboration
- Video transmission systems, including, but not limited to, cable TV and videoconferencing
- Remote access systems
- Desktop and portable computing and communications hardware and software
- Mobile computing and communications systems and applications

Objectives

1.a. Enhance Multiple Channels of Communication and Collaboration.

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Strategic Initiatives

- **Expand the use of the Web to enhance two-way communication with customers and the public.**

  This will allow residents to interact with and provide input to their City government at their convenience through such things as surveys, citizen engagement systems and public input vehicles. It also will increase the availability of 24/7 City services on the Web.

- **Further utilize social networking to provide a variety of methods for communicating with customers and the public, including Twitter, Facebook, etc, and other emerging applications.**

  These channels allow the City to reach different segments of the public who prefer to use social networking to receive information from and communicate with the City. They also allow interested people to see and respond to comments from others.

- **Consider the deployment of technologies to enhance public interaction at City meetings.**

  Not everyone can attend and participate at City meetings. New technology may allow people to participate in real time from their home, office, and other remote locations. This might include the ability to offer testimony at public hearings, depending on legal constraints.

- **Expand the use of virtual private network (VPN) 24/7 remote access to enable employees to telework, especially during emergencies.**

  A VPN is a combination of software and/or hardware that creates, via the Internet, a secure and private connection. This will allow employees to remotely access City files and applications they need to perform work. This is especially important during emergencies when employees may not be able to physically report to work, but could telework from home.

- **Evaluate the effectiveness of the City's e-mail infrastructure. Evaluate moving the City's messaging and collaboration services to the Cloud.**

  The City uses the IBM Lotus Notes e-mail collaboration infrastructure. A number of workflow applications and collaborative tools are part of this including: an "e-genda" system the City developed for preparing agendas for public meetings, a project tracking system, a citizen service request tool, room reservations, training reservations, and travel expenses. An evaluation of this infrastructure would not only look at e-mail, but all of the critical workflow applications and options

for moving these to alternative platforms/ products and/or moving them to the Cloud or a hosted environment.

- **Upgrade/replace the City's e-mail and collaboration infrastructure.**

  Depending on the evaluation (above), the e-mail and collaboration infrastructure maybe either replaced or upgraded and will likely be moved to the Cloud.

- **Expand the use of the City's Intranet, messaging and collaboration technologies to include file sharing, instant messaging, blogs, wikis and other tools.**

  To enhance communication and collaboration among employees, the City's Intranet site (I-Rock) and messaging system will be expanded to include instant messaging and variety of applications to enhance information sharing. They also enable the creation of electronic workspaces that allow groups of employees to share documents in real-time from different locations.

- **Expand text alert and automated dialing systems to notify employees and the public of emergencies and other time sensitive information.**

  These tools will allow for more timely and reliable communications, and by "pushing" information out to target audiences, they will reduce the need for people to check in for updated information.

- **Expand the use of videoconferencing and webinars to reduce travel costs, increase communication flexibility and enhance productivity.**

  Videoconferencing can be used internally to connect employees at different locations and allow them to see visual items being discussed. The City is already using and should expand videoconferencing to communicate with other jurisdictions in the region on a dedicated network. Webinars provide an alternative to or an adjunct to traditional in-person attendance at professional development seminars that sometimes are at a distant location.

1.b. Enhance Mobile Computing Communication Systems.

Strategic Initiatives

- **Offer new ways for citizens to communicate with the City utilizing smartphone applications and GIS.**

  "Smartphones" are mobile telephones with built-in and add-on software applications and that have Internet access. These are becoming the most popular devices for communication and task computing. Some cities are beginning to offer GIS-based applications

that allow the public to make service requests and report problems (such as pot holes or downed trees) at their locations. It also allows people to check on voting and school districts, view property information, view information for City services, and find leaf collection districts and schedules.

- **Provide mobile-based systems for employees to access essential applications in the field.**

  Accessing systems such as permitting, e-mail, GIS, customer service requests, asset management, and licensing allows inspectors and other employees to do more work in the field, access the information they need, and update information, thereby increasing efficiency and reducing travel and office time.

- **Continue supporting Rockville Police use of the County's wireless public safety applications and assist with upgrades as warranted.**

  In addition to the radio systems in police vehicles, there is a mobile data system that allows police to access information remotely. These include running vehicle checks and criminal checks and report writing.

Goal 2: IT Department Consulting Service

The Department of Information Technology provides technical and strategic leadership and consultation to City departments.

Reasoning: There is a strong desire by departments for the IT Department to increase and enhance its consulting role. To make the best use of limited resources, ensure technologies are compatible and promote communication throughout the organization on emerging technologies and City technology priorities, it is essential that the IT Department provide coordination and leadership.

The IT staff generally is in the best position to learn about and analyze new information technology. There are times when staff in other departments become aware of technology tools designed for their particular fields, as well as general technologies they use as consumers in their non-work lives. It is critical to achieving the organization's business and technological goals that this knowledge and expertise is shared with the IT staff and departments.

To provide leadership for the organization, it is critical that the IT staff has the resources and processes for doing research, evaluation and analysis of current and emerging technologies. It is imperative, also, that a partnership is formed with staff in other departments, so they can share their specialized knowledge, technology needs and

technology plans with the IT Department to ensure best use of resources, coordination and identification of solutions that can serve the needs of all stakeholders.

Scope: Includes knowledge, knowledge sharing, and the analytical skills—both technical and business processes—of the IT staff. It also focuses on developing enhanced two-way communication on technical matters and business processes between IT and other departments.

Key Components

- Development of consulting services targeted to most important needs of departments and organization
- Research, analysis and development (on-going and special projects)
- Communication on information technology developments, possibilities, needs, plans, priorities, goals and solutions
- Policy and process development and implementation

Objectives

2.a. Improve IT Best Practices

Strategic Initiatives

- **Establish IT consulting services to work with departments to identify how best to use technology to improve processes and service delivery.**

  Departments have indicated they want and need technical advice from the IT Department in planning for, purchasing, and managing the increasing technology involved in their operations. The IT staff is in the best position to provide this information; obtain additional information; and make certain that technology is compatible with the City's infrastructure and support capabilities.

- **Develop policies and processes for City departments to engage the Department of Information Technology early and often for leadership and guidance in both the technical and strategic aspects of information technology.**

  It is critical that departments advise the IT Department early in their technology planning and purchasing processes to ensure compatibility of technology, support capabilities, and sufficient time for review and, if necessary, research of alternatives.

- **Develop service level agreements with end-users and departments.**

Service level agreements detail the nature, quality, and scope of the service, as well as the responsibilities of each party. This helps manage expectations and reduce misunderstandings.

- **Enhance mechanisms for monitoring and communicating with users the status of their Help Desk tickets and how new service requests are handled.**

  While the IT Help Desk and staff were identified as a "strength" in the employee focus group SWOT analyses, some employees expressed a desire to be informed of the interim status of their request, not just the completion. Communicating to employees the priority levels for requests in general, the priority assigned to their request, and the process for handling requests will increase understanding and may help reduce the anxiety sometimes associated with technical problems.

- **Communicate on a regular basis City IT-related news, work plans, project status, policies, practices and processes to employees.**

  Employees have expressed an interest in receiving routine updates on the status of IT initiatives and policies. The IT Department will use a variety of media to reach staff at all levels in the City.

- **Identify technologies that will facilitate communication between departments and citizens.**

  Just as social media has changed the way departments can communicate with citizens, many new technologies may emerge over the next five years that may help improve the way the City can inform, notify and improve two-way communication with the public.

- **Develop a process for obtaining end user input on certain products that are being considered for purchase or lease.**

  Sometimes a product or system, may meet the needs of the department responsible for it, and those for whom it is a primary tool, but may not be easy to use for employees in other departments who have to use it, particularly those who do not use it every day. Before the City invests a large amount of money in such a product, end users should have a chance to try it out to make sure it is easy to use and meets their needs.

- **Modify PC support staff schedules to provide Help Desk assistance beyond normal work hours.**

  Employees at the Rothgeb/Gude Maintenance Facility, the Water Treatment Plant, the RedGate Golf Course, recreation facilities and the Police Department have work hours other than the standard 8:30 a.m.-5 p.m. hours. Having help desk assistance available earlier in the morning will allow these employees to get IT problems resolved more promptly and be less disruptive, allowing them to continue their

work and service to the public vis-à-vis computers, e-mail, the Internet and telephone.

2.b. Prepare for the Future Through Research and Development (R&D).

Strategic Initiatives

- **Develop a process and resources for on-going and special projects research.**
  As the IT Department develops a more consultative role, it will be imperative that it keeps up to date on emerging technologies and to advise City departments on technology solutions. Also, a process will need to be developed for other departments to work with IT and request research services on specific products and processes related to their core missions to make sure the solutions help serve customers and are compatible with the City's IT infrastructure. This initiative includes subscriptions to IT research and analysis services that provide information and consultation on technology and technology-related processes. Using these services saves time and enables staff to react more quickly to emerging technologies.

- **Evaluate smart computing technologies for water meters, traffic lights, supervisory control and data acquisition (SCADA), security and other technologies.**

  Smart computing technologies have the potential to save staff time, decrease response times to customer needs, help manage traffic flow and record data that can be used to improve service delivery, analyze operations and make decisions that can impact budgets.

- **Educate employees on new and emerging technologies**

  Armed with up to date research and information, IT staff can educate and provide advice to other staff on technology solutions that help improve service and operate more effectively and efficiently.

LEADERSHIP AND STRATEGIC ROLES FOR IT DEPARTMENT

- Keep the organization aware of new and emerging technologies.
- Set IT standards and policies.
- Advise on the purchase, implementation, use and maintenance of information technologies.
- Provide for consistency and interoperability of IT systems.
- Foster two-way communication on information technology between IT and other City departments.

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Goal 3: IT Infrastructure

The IT infrastructure is enhanced and supported to provide the tools and resources for information technology to operate efficiently and effectively.

Reasoning: Infrastructure is the hardware used to interconnect computers and users including communication systems, plus the software to support these functions. It is the foundation upon which all City-based information technology is built and relies. Its reliability, capacity and capabilities are inextricably interwoven with all the information technologies and the City's ability to deploy and use the tools needed for efficient business practices and delivery of services.

Because so much of what the City does now depends on the information technology infrastructure, protecting it, enhancing it, and ensuring its reliability must always be a high priority.

An up-to-date infrastructure is necessary to support all of the applications and services that the City relies on and are envisioned by this plan. Technology is changing at an ever-increasing rate and having a stable and resilient infrastructure helps ensure that new software and hardware is compatible and can be supported. The infrastructure must be continually maintained and kept up to date.

Likewise, the desktop and mobile computing devices and software that enable City staff to provide their services and meet the organization's business goals need to be maintained and kept up to date.

As the infrastructure grows in complexity and scope, increasingly sophisticated tools need to be employed to monitor, maintain and configure the systems. As more demands are made on the IT staff to provide consulting services and advisory services, they will need to employ automated systems for some monitoring and other somewhat routine duties.

The most essential component of the City's technology infrastructure is the network. With increasing reliance on the intranet and Internet for services and communication, the City needs to maintain a fast and reliable network and connectivity to the Internet.

Another essential component is a secure infrastructure to protect the City from an ever-increasing number of cyber attacks and threats, both intentional and accidental. Every day, thousands of new types of malicious software ("malware") are introduced in efforts to steal, erase, manipulate, and modify information and systems for profit and other ulterior motives. Furthermore, auditors and government regulations are raising requirements for even more sophisticated information security measures. There is an increasing demand for transparency in government and for electronic participation in government; this means increased external electronic access to City information/data and, in some cases, the ability to manipulate it for analysis and comment. External stakeholders provide

personal information, including credit card numbers, in conducting electronic business with the City.

Unintentional and accidental incidents can damage or destroy the infrastructure and the information it contains. Among these are power outages, operator errors, cable and wire cuts, cooling system malfunctions, lightning strikes, plumbing leaks, damaged equipment, software "bugs," and worn out or faulty equipment.

Scope: Includes the hardware, software, transmission networks, security protocols, backup and recovery systems, and monitoring systems that provide the foundation for all information technology.

Key components

- Servers, software, network
- Storage capacity
- Switches, routers, and related equipment and software
- Cabling, fiber-optic and wireless transmission facilities
- Data centers
- Internet connectivity and service
- Telephone system
- Video transmission systems
- Remote access systems
- Security systems, hardware, software subscriptions and services
- Desktop and portable computing and communications hardware and software
- Monitoring systems
- Backup and recovery systems
- Security
- Police Data Network
- Advanced telecommunication services in the community

Objectives

3.a. Enhance the Institutional Network and Internet Connectivity.

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Strategic Initiatives

- **Deploy fiber to remaining institutional network (I-Net) sites, including Thomas Farm Community Center, Water Treatment Plant and the new Police Station.**

  Fiber-optic cable provides more reliable and higher capacity communications. For instance, it is needed to be able to do live television coverage of events such as Mayor and Council town hall meetings at City facilities throughout the community via the City's network. Its capacity allows employees to exchange large electronic documents, such as budgets, maps and graphics in single pieces quickly.

- **Upgrade the City's I-Net backbone from 1 Gb to 10 Gb or greater capacity to accommodate future demands for video, voice and data.**

  As I-Net traffic increases with voice, data and video conferencing, the City's backbone will need to be increased to accommodate this added traffic. Ten Gb offers significantly more capacity and speed over the 1 Gb backbone the City first installed in 2002.

- **Increase Internet bandwidth to support increasing demand by users and Cloud-based applications and storage.**

  The City did quadruple Internet bandwidth (capacity) three years ago, but the bandwidth is inadequate for meeting current user needs and users routinely find Web page load times are very slow. As the City moves more software applications to the Cloud, it will be essential to have significantly more Internet bandwidth for City staff to connect and run these applications.

- **Provide the cabling, wireless, and other technology infrastructure for new and renovated facilities including the new Police Station and the Gude Drive maintenance facility.**

  New facilities will require cabling and technology infrastructure, which are normally programmed into the overall cost of these projects. These projects will require significant involvement of IT staff resources for planning, project management and implementation.

- **Identify and pursue enhancements to the City's technology infrastructure as part of negotiations for cable television franchises, rights–of–way use agreements, leases of City property for telecommunications uses and other appropriate opportunities.**

  Most of the City's network has been provided at no cost to the City as part of the compensation obtained from cable and telecommunications companies in exchange for use of the City's public rights of way. This has provided a state of the art fiber-optic network at an estimated

savings of several million dollars. Through this network, the City is now able to provide high speed, high capacity data, voice and video communications. Live television programs, such as Mayor and Council town hall meetings and emergency information, can originate at any City facility on the fiber network. The network has allowed the City to employ a Voice Over Internet Protocol telephone system, eliminating the need for traditional telephone lines and saving the City more than $150,000 a year. It has allowed employees to exchange large electronic documents between facilities, thereby saving the time and fuel costs that previously were incurred in driving these documents to different site.

3.b. Enhance and Expand Hardware and Software Infrastructure.

Strategic Initiatives

- **Expand storage capacity through the use of in-house and Cloud solutions.**

  Expanded storage capacity is needed to accommodate the increasing amount of information being generated and received. With so much of the City's data and information being electronic, it is imperative that adequate storage is available.

- **Upgrade and enhance the City's Voice-over-Internet Protocol (VOIP) telephone system as needed, and consider unified messaging to integrate phone and fax with messaging infrastructure.**

  The City maintains a state of the art VOIP telephone system that reduces the need for expensive leased lines resulting in significant annual cost savings. VOIP runs all telephone traffic over the City's data network, saving cabling costs as well. As with any technology, routine upgrades and feature enhancements are part of required maintenance. Unified messaging is a feature that converges fax, voice mail and email. For example, faxes and voice mail messages can be received in a user's e-mail inbox. This is something the City may wish to consider in the coming years

- **Expand the City's backup recovery facility and a secondary site and/or in the Cloud.**

  As mentioned in the reasoning section above, there is an increasing number of intentional and accidental threats to electronic information. If the City's main computer facility is compromised or fails, a backup site is essential for continuity of City operations.

- **Implement server and desktop virtualization technologies to reduce energy consumption, speed up desktop/server deployment,**

improve disaster recovery capabilities and enhance remote access capabilities.

A significant development with server and desktop deployment is the use of virtualization. Virtualization technologies are software applications that allow a single desktop computer or server to mimic multiple desktops or servers, saving power and hardware costs.

- **Make future upgrades of Microsoft Office as needed and periodically evaluate competing products and using these applications in the Cloud.**

  The Microsoft Office suite (including Word, Excel, PowerPoint, Publisher and Access) is widely used by City employees. Failure to keep the City's Office suite up to date can result in incompatibility of documents that customers provide to the City and vice versa. This can result in delays in providing service and responding to customers. It also can result in frustrations for customers and staff, and in additional expenses and staff time for document conversion software. To maintain compatibility and customer convenience, it will be necessary to monitor the availability and acceptance of competing products. Also, using the applications through the Cloud may reduce costs and accelerate upgrades.

- **Extend the capabilities of GIS throughout the City and integrate with other address-based applications and expand the use of Web-based applications for staff and the general public.**

  Geographic Information Systems (GIS) is widely used by the City to present address-based information in a visually appealing way that helps the public, elected officials, and City staff understand and analyze essential information. Making these systems more accessible through the Web and streamlining electronic map creation will make this key asset even more valuable to the City and the public. Examples of information are land records, location of parks, street and property boundaries, and trash and leaf pickup schedules.

- **Encourage the rollout of competitive advanced telecommunications services in the community while protecting the City's and community's interests.**

  The City has and will need to continue to play an assertive role in getting the whole community included in plans for competitive cable television services, high speed Internet and phone service. In working with the community and carriers to allow use of the public rights of way for wire-based services, the City has been and will continue to be successful in requiring these companies to protect and repair streets, trees, sidewalks and private property. As the demands for wireless

service increases it will be important for the City to continue to play an active role in balancing desires for expanded wireless service against the visual impact of wireless towers and other facilities.

3.c. Enhance Security For Transactions, Storage, and Back-Ups.

Strategic Initiatives

- **Implement leading-edge security measures to protect the City's technology infrastructure and comply with industry and government standards and regulations.**

  Local governments are increasingly becoming targets of electronic thieves and hackers and software attacks from malware and viruses. Without up-to-date security measures the City's network would be vulnerable to these threats. These threats could result in the information being changed, manipulated or lost.

- **Utilize biometrics and other technologies that improve security and streamline user or citizen access.**

  The City has several highly sensitive areas to which access needs to be restricted, among them, the Police Department, the Water Treatment Plant, data and phone closets, maintenance and storage facilities, and the Finance, Legal, Human Resource and IT departments. Citizen access to recreation facilities may benefit with the use of biometrics technologies to eliminate the need of membership cards.

- **Regularly evaluate disaster preparedness and conduct drills and tests.**

  From power and telephone outages, to fires, to electrical surges, to hacking and malware, and countless other types of incidents, natural and manmade disasters have the very real potential for interrupting technology services provided directly to customers (e.g., telephone, e-mail, Internet), and indirectly via the City departments served by IT. Preparation, drills and tests help minimize the potential impact on services and maximize staff's ability to respond.

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Goal 4: Information and Document Management

Employees and customers have access to City-based systems that facilitate storage, retrieval, analysis and reporting of City information.

Reasoning: The City is a heavy user, creator, receiver, custodian and distributor of information Its stakeholders—internal and external—need convenient and ready access to the information to do their work, use City services and to be informed participants in their municipal government. As the volume of information increases, there is an increasing need to effectively and efficiently organize it, store it, retrieve it, analyze it and present it.

A major component of this goal is reducing the number of paper documents, which also plays a significant role in contributing to Rockville's "green" initiatives and priorities. In addition, providing information electronically supports teleworking and reduces customer vehicle trips to City facilities to conduct business.

In the last several years, there has been an increasing number of requests under Maryland's Public Information Act (also known as "FOIA" for Freedom of Information Act) for copies of e-mails in the City's possession. Searching for these documents without sophisticated information technology systems is extremely labor intensive and can make it difficult to comply with these regulations.

A sophisticated and unified document management and imaging system and an e-discovery system for e-mail also would contribute to the efficiency and effectiveness of responding to public information requests and document requests under legal discovery proceedings for documents.

Scope: The information and data needed and used by the City and its stakeholders and the tools that will enhance creating, collecting, storing, retrieving, analyzing, and sharing that information and data.

Key Components

- Tools allowing customers to access and analyze information and data
- "Dashboards" and other business intelligence software
- Document imaging and management

Objective

4.a Enhance Data and Document Storage, Retrieval, Organization, Sharing and Access.

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Strategic Initiatives

- **Make commonly requested data available to the public in an industry-standard interactive format to improve transparency and inform the public (e.g. data.gov).**

  Research shows the public wants access to more government information and the ability to analyze it, and that government is responding. Using an industry-standard interactive format provides access for the most people and also gives people the ability to select and work with data and analyze it in new and innovative ways. This can lead to more informed citizen participation in government, neighborhoods and individual lives.

- **Utilize imaging and document management systems and other "green" technologies to reduce paper and improve the efficiency of document storage, retrieval and organization.**

  - **Create a Citywide document management discipline/practice for naming, managing and organizing documents.**
  - **Implement an enterprise-wide document management/imaging system for all City Departments.** *Information and data is stored in a number of ways, including electronic and paper forms and in a number of places. Without an organization-wide naming/organizing discipline and document management and imaging system there is a delay in responding to residents, elected officials and other customers as staff spends time searching for the documents and information. These systems also will help ensure that all relevant documents and information are found. Document imaging—converting paper documents to electronic ones—also contributes to faster retrieval and the ability for customers to receive the information electronically rather than having to go to City Hall or wait for mail.*

- **Deploy a system for archiving e-mail to effectively and efficiently support Maryland Public Information Act (MPIA), eDiscovery and other regulatory and legal requirements.**

  With much of the City's internal and external communication being conducted by e-mail, there has been an increasing number of requests for copies of e-mails by private citizens, the news media and political candidates. In legal matters, discovery processes have moved to include requests for e-mails. Without the archive system, it takes staff a great deal of time to search through e-mails to find those requested. Responses may take a long time and may miss relevant e-mails. Since

*these time-consuming requests must meet legal deadlines, other work of staff may have to b**e** delayed.*

- **Enhance information sharing with other jurisdictions.**

  From grant requests, to legislative and regulatory input, to sharing maps, reports, crime statistics and other information, it is crucial for the City to be able to communicate quickly and effectively with other municipalities and county, state and federal governments. Without reliable standardized or compatible electronic files, documents and systems, the City could face negative budgetary and regulatory impacts, as well as being left out of important decision making processes involving area and regional transportation, public safety, environmental and other matters.

4.b. Use Data to Improve Analysis and Decision Making

Strategic Initiative

- **Implement business intelligence software to improve decision-making with "dashboards" and other software applications.**

This can have positive impacts on budget, operating and policy decisions, including more thorough and timely analysis. From staff research: "a dashboard is a user interface that, somewhat resembling an automobile's dashboard [with gauges and dials, that] organizes and presents information in a way that is easy to read. Information is gathered from multiple data sources and presented into a visually appealing dashboard in a user-friendly manner. Users have the ability to find and fix negative trends, efficiencies and inefficiencies. Users at the management level can gather business intelligence with the goal of making more informed and better decisions and align strategies. There is a huge time saving aspect of utilizing one dashboard rather than running multiple reports."

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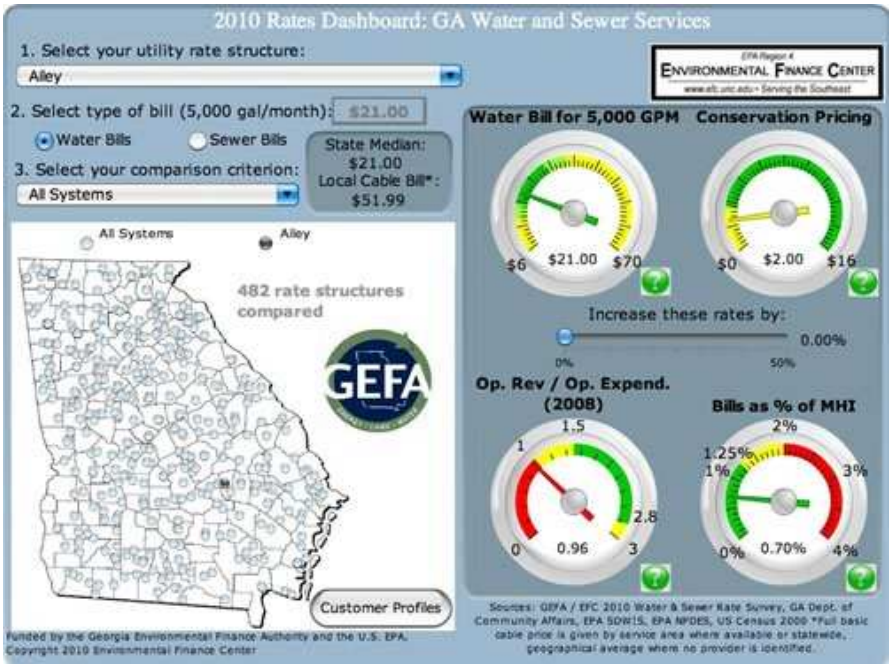
Examples of business intelligence dashboards:

Source: AOC Support Services aocsupportservices.com



Source: Georgia Environmental Finance Authority gmanet.com

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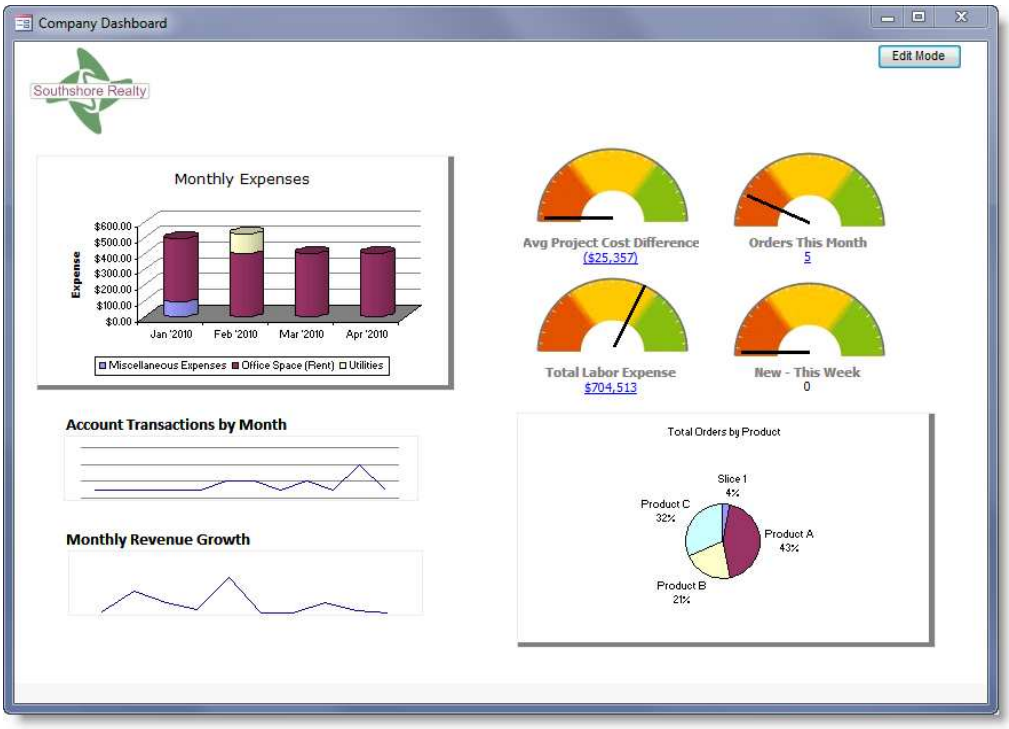

Source: Opengatesw.net dashboard template for MS Access

Goal 5: Software Integration and Interaction

Software systems are integrated, adaptable and user friendly, supporting efficient and effective business processes and service delivery.

Reasoning: Departments need all or most of the City's essential software applications such as budgeting, purchasing, financial management, payroll, employee time tracking, and talent management systems.

Additionally, the City needs systems that will allow the departments to interact with each other to avoid redundancy, miscommunication and inefficiencies. One such system that crosses department boundaries is permitting for development projects. Another is customer relationship management (CRM), which has similar internal benefits, plus benefits for external customers, such as quicker, coordinated and comprehensive responses to questions and concerns that often cross department boundaries. With a fully integrated enterprise software system, City staff will be able to track all transactions and interactions a citizen or business has with the City staff in a centralized database. This capability will improve customer service and staff response as well as efficiency.

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Scope: Includes enterprise software or all systems that are needed by more than one work function group and that help provide essential business functions for departments to serve citizens. Most of these applications are address-based applications, which can more easily be integrated, especially with the City's Geographic Information System (GIS).

Key Components

- Asset management and work order systems
- Permitting, code enforcement, business licensing, animal licensing and public works contract management
- Financial (General Ledger, Accounts Payable, Payroll, Inventory, Budget, Purchasing and Utility Billing systems)
- Human Resources, talent management, applicant tracking and employee self-service systems
- Customer relationship management
- GIS

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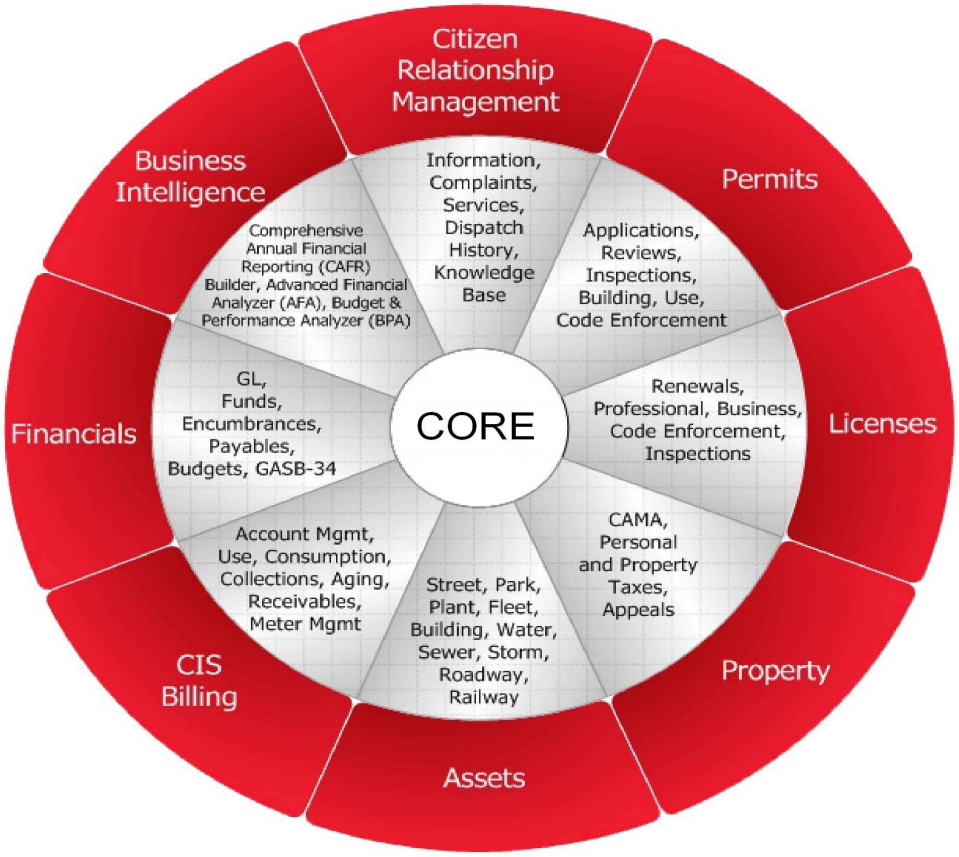
Enterprise Resource Planning (ERP) System



Objective

5.a. Increase and Enhance Effective and Efficient Delivery of Integrated Quality Services for Internal and External Users.

Strategic Initiatives

- **Acquire and implement a single enterprise (or ERP) solution where practicable to replace major stand-alone enterprise software including: budgeting, utility billing, permitting, code enforcement, licensing, finance, HR, payroll, inventory, purchasing, asset management, work orders, citizen engagement and other modules.**

  This is the major priority emerging from the IT Strategic Plan. When software systems are integrated and talk to each other, it can help provide better service to customers and improve and facilitate

information sharing. The integrated software also can streamline all financial operations, making sure all related systems have and share the same information. It facilitates data management and analysis, thereby aiding decision-making. By providing a greater degree of interaction between major functions, it helps eliminate data silos while increasing transparency and fully informed responses to citizens.
See also: Appendix B: ERP Overview, p. 90.

- **Implement a talent management system to automate performance appraisals and track employee training and certifications.**

  The City's performance based evaluation and merit system relies on a comprehensive evaluation tool to help ensure fairness and, to the extent possible, objectivity. An electronic system streamlines performance evaluations and approvals to help increase the timeliness of their completion, including feedback to the employee and performance planning. It also will help ensure that training and required certifications are tracked and kept up to date.

- **Evaluate the feasibility of implementing a customer relationship management (CRM) system for all departments to use.**

  Currently, if a resident requests a service or submits a complaint, it is directed to the appropriate department, but that department has no direct way of knowing whether another department has worked with the resident on the same or similar problems, what action was taken, what the outcome was and whether there are any permits pending. The department might not even know that another department should be involved in some aspect. A customer relationship management system bridges these communication gaps and helps increase the consistency, accuracy and completeness of responses to residents.

- **Utilize radio frequency identification (RFID) to streamline inventory control and asset tracking.**

  This latest type of inventory and tracking technology helps a wide variety of businesses operate more efficiently, plan purchases and deploy its resources. The same benefits accrue to government and the supplies, tools and equipment it uses to serve its customers. The technology has evolved to where it can be used on fixed assets such as water pipes buried underground, so it can keep track of when the pipe was installed, repaired, when it had a break and when it was last inspected. This can help in planning the orderly and cost effective replacement of assets and reduce unexpected breaks, service disruptions and emergency repairs.

- **Utilize GPS and vehicle tracking systems to more effectively manage field operations.**

  With these systems, the City will be able to tell, for example, where its snowplows are, where they have been, and where the closest available one is to respond to a particular problem area. A Web interface will also be available for citizens to view and track similar information including refuse and leaf pickup operations.

- **Continue to utilize City interactive voice response (IVR) systems and make adjustments as appropriate.**

  These are systems that further extend the hours of City service so residents and other customers can access information and register for recreation classes and schedule City services at their convenience. For example, for construction related permits, customers can call the City 24 hours a day, seven days a week to schedule inspections, cancel inspections, and obtain inspection results. A similar system allows customers to register for recreation programs and classes by phone 24/7 in case they do not have Internet access or do not feel comfortable doing business over the Internet.

Goal 6: Prioritization and Funding of Information Technology

Information technology solutions are high priorities for the organization and are funded, acquired, developed and implemented in a timely and cost-effective manner.

Reasoning: While it is not always possible to quantify the efficiencies, coordination and collaboration provided by leading-edge technologies, it becomes readily apparent when the technology is not available to help staff operate at a high performance level. It is apparent to staff, elected officials and external customers when they are not able to get the information they need and want in a timely, accurate and easily accessible manner.

The results can include confusion, frustration, duplication, incompleteness, inaccuracies, time delays, lower staff morale and customer dissatisfaction with—or even distrust of—government. Without a recognition by the organization and its stakeholders that information technologies are high priorities from both a strategic and resource assignment/management perspective, these tools can fall into the "want" basket instead of the "need" basket or be ignored.

Scope: Includes the following key components:

- Research and development
- Two-way communication with internal and external customers
- Operating budget development and administration
- Capital Improvements Projects (CIP) budget development and administration

Key Components

- Citywide management, budget, and purchasing policies and practices
- IT Department practices and policies
- Communication with staff and the public
- Research and development

Objectives

6.a. Develop Citywide Best Practices for Prioritizing and Funding IT Solutions and Projects.

Strategic Initiatives

- **Develop processes and criteria for prioritizing IT Capital Improvement Program (CIP) projects and operating budget items (including staffing and training).**

  IT capital projects do not always fit in neatly with the goals and criteria established for departments that provide direct service to the public. However, these projects—such as ERP and document management systems—are critical for the organization to provide timely, accurate and efficient services. With new and updated technology employed to meet the needs of the organization adequate resources are essential.

- **Develop a Citywide management policy identifying information technology as an organization priority for enhancing service delivery and efficiency and effectiveness of operations.**

  A clear management statement that information technology is an organization priority makes it a key element in the framework for long-range and day-to-day operating and budget decision-making. It is aimed at ensuring that technology does not become an afterthought in efficient and effective service delivery to the public.

- **Develop Citywide expectations on technology training for current employees and new hires.**

If the organization is to take full advantage of its technology, it must ensure that its staff knows how to use it. Staff, supervisors, managers and directors need to be aware that they are expected to be proficient with the technology provided to them. Similarly, they need to know that management expects training to be provided to and used by employees. Without clear expectations, individual and collective performance and service delivery to the public risks being less than optimal.

6.b. Improve IT Budgeting and Purchasing Processes.

Strategic Initiatives

- **Develop processes for departments to partner with IT for investigation, purchase and deployment of technology.**

  Without a pre-purchase partnership, there is a risk that technology will be purchased that the IT staff is not aware of, cannot support, and/or is not compatible with the IT infrastructure. For example, if a department buys a server and software for a particular need, it might not be compatible with other systems such as e-mail, finance and Microsoft Office. The files that are created may not be able to be shared with any other system. If the system goes down, and there is no maintenance agreement with a vendor, IT support staff may not be able to troubleshoot or repair it. In all of these cases, the service for which it was bought may be interrupted and unavailable to internal and external customers.

- **Work with the Purchasing Division to determine ways to streamline or modify purchasing processes and requirements for technology.**

  The City must be able to quickly respond to changes in technology and needs while at the same time, providing the fairness and accountability demanded of government purchasing. Particular brands sometimes are needed for compatibility, availability of support systems and reliability. Sometimes the number of manufacturers and resellers is limited. Also, there have been instances where the best price can be obtained by not "riding" on another contract. When employees and the public embrace a new technology—such as Blackberries and other smartphones—the City needs to be able to respond with support infrastructure and staff training.

- **Annually checking with end users and departments for hardware/software/training needs.**

  By keeping in touch with the needs and desires of users, the IT Department will be able to plan ahead, explore options and set priorities. For example, if a large number of users need the full

Adobe Acrobat suite of products rather than just the reader, purchase and training can be done on an enterprise basis rather than individually, saving the City money and improving efficiency. It can also help reduce mid-year requests for unbudgeted items.

- **Identify new needs and technologies and provide flexibility in responding to them.**

  The burgeoning use of smartphones and development of applications is an example of new technology that the City needs to look for and respond to for service delivery to the public and for use by staff. Planning purchases up to 18 months in advance with the current budgeting requirements often does not provide the flexibility for the City to respond to rapidly changing technology and needs.

- **Communicate technology priorities, plans, needs and opportunities with City staff and the public.**

  Whether it's updated capabilities for the website or a document management system, it is important for those who use the technology and those who pay for it to know what is being done, why it is being done and how it will benefit the organization and its customers. For the public, there is not an opportunity during the budget process to fully communicate technology priorities, needs and plans, so this must be done at least periodically to help inform decision making. For staff, communication can help manage expectations and reduce anxiety and frustration. It also can help staff prepare for using the new technology.

Goal 7: Training

City employees are provided the training necessary to increase the organization's technological competency and productivity. Technology staff is provided the training and resources necessary to support, maintain, and enhance information technology.

Reasoning: While most of the other goals focus on investing in the technology, this goal deals with the investment in the people using and supporting the technology. If the users are not knowledgeable and proficient, the City and its customers will not benefit from the full capabilities of the technology. The users also may revert to less efficient and effective ways of doing their work, and they may spend unnecessary time trying to resolve problems either on their own or with the help of IT and other staff. Some of these problems need the attention of skilled IT staff; others could be handled by knowledgeable and proficient users.

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Likewise, without the technical training for IT staff, the City will not realize the full benefits of technology and will not be able to adequately support, maintain, repair, upgrade and integrate the technology. That training also will help the IT staff provide advice and assistance to departments on the acquisition, deployment and use of new technologies.

Scope: This ranges from the proficiency standards for new hires and existing employees to all aspects of user training on hardware, software and systems. IT staff training includes ongoing training on current technologies, as well as training on new technologies in general and on new systems purchased by various departments.

Key Components

- Identification of existing and needed technical skills
- Establishment of minimum technical standards for various job descriptions, requirements and evaluations
- Mandatory training for staff who do not meet minimum standards
- Training as a component of new technology purchases
- Professional training for IT staff
- Cross training on critical systems for IT staff
- Alternative forms and methods of training
- Advanced training
- Financial and time commitments for training

Objective

7.a. Increase Technical Proficiency and Expertise

Strategic Initiatives

- **Identify technical IT skills and knowledge that exist and are needed within IT and other departments to provide optimal services.**

  Without having a quantifiable baseline, the City risks wasting money on unnecessary training and not providing the training that is needed to take full advantage of technology investments. For example, if the majority of people who use Word in their job are proficient, it would be unwise to spend money on large-scale Word training. If the City decides to invest in virtual servers but does not have any IT staff trained in supporting them, they cannot be used to their full potential, if at all, and cannot be updated as needed.

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- **Develop an End User Technology Training Program.**

  As the City has increased its dependence on technology for conducting day-to-day operations, it has not developed a comprehensive on-going program to ensure that the work force is proficient in the use of the technology. With the use of technology being integral to so many positions in the organization, use and proficiency standards must be developed and become as much of a part of a job description and evaluation as other skills, knowledge and tasks needed to successfully perform.

  - **Coordinate with Human Resources and other departments to set minimum technology proficiency standards and identify critical applications for new hires and apply the standards in job descriptions, requirements and evaluations.**
  - **Provide mandatory training for current staff to learn essential skills.**
  - **Require that training for users and IT support staff is a component of the purchase of any new information technology.**
  - **Offer orientation training and ongoing training on security awareness and essential systems and procedures.**

- **Ensure IT staff development**

  With rapid changes in technology and frequent upgrades to existing hardware and software, IT staff needs regular training to support and trouble-shoot City systems. If, for example, a telephone system server needs to be upgraded and staff is not trained, it cannot do the upgrade, and it cannot provide the day-to-day support. Similarly, if there is a problem with the server, staff without current training cannot diagnose the problem or try solutions. This can result in phone service to City departments, such as Police, being interrupted. Furthermore, with the large number of systems to support, it's essential that staff have enough cross training to back each other up when there are absences and when after hours support is needed.

  - **Provide training opportunities to IT staff to keep current and learn new technologies they are required to support and encourage staff to obtain certifications where appropriate.**
  - **Increase cross training on critical systems for IT staff.**

- **Provide a comprehensive program of delivering training.**

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This type of program would allow flexibility in providing training online, via a library of interactive DVDs, through in-person or videoconference sessions and other ways. This variety can make training available to more people at their convenience, save on travel costs and meet the needs of people who best learn by different methods.

- **Evaluate alternatives that would allow citizens to participate remotely in department-offered classes, academies and other training.**
- **Develop various methods of offering training on core and other topics with frequency, flexibility, and manner of instruction to meet users' needs in various locations.**
- **Build a knowledge base of commonly requested information for users to refer to online.**
- **Provide increasingly sophisticated levels of training so that technology is used to its full capacity.**

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STRATEGIC INITIATIVES

ESTIMATED TIMELINES AND COSTS BY

1. GOALS AND OBJECTIVES

2. FISCAL YEAR

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STRATEGIC INITIATIVES

Estimated Timelines and Costs

The following tables itemize strategic initiatives in two different ways: (1) by goals and objectives, and (2) by fiscal year. They each provide an estimated time frame and estimated costs through FY16.

The time frames for strategic initiatives were prioritized taking into account the results of the employee survey and focus groups; the IT staff retreat and analysis; costs; budget priorities and limits; age or absence of hardware, software and policies/procedures; length of time needed for investigation, analysis and implementation; and staff and other resource availability.

Estimated costs are a reflection of informed experience of the IT staff and/or research. For some initiatives, there is both a one-time cost and a recurring cost. The one-time cost reflects a new purchase, a substantial upgrade or change to an existing technology. Recurring costs reflect the nature of technology investments, which includes things such as periodic updates in hardware and software, regular license renewals and maintenance/replacement.

Please note: The costs itemized are for only the new strategic initiatives identified in this plan. They do not include other IT budget items such as normal replacement/upgrade of existing hardware and software; parts; supplies; licenses; service contracts; etc.

While not itemized, staff time needed to prepare for and implement projects is an important factor in making final determinations on timelines for projects. This includes not only the time required of IT staff, but that of staff in other departments affected by or leading the projects. Further, consideration must be given to the other duties and responsibilities of staff.

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STRATEGIC INITIATIVES
ESTIMATED TIMELINES AND COSTS
BY GOALS AND OBJECTIVES

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[INSERT TABLE: Timelines and Costs by Goals and Objectives]

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[INSERT TABLE: Timelines and Costs by Goals and Objectives]

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[INSERT TABLE: Timelines and Costs by Goals and Objectives]

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[INSERT TABLE: Timelines and Costs by Goals and Objectives]

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STRATEGIC INITIATIVES

ESTIMATED TIMELINES AND COSTS BY FISCAL YEAR

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[INSERT TABLE: Timelines and Costs by Fiscal Years]

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[INSERT TABLE: Timelines and Costs by Fiscal Years]

CONCLUSION

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CONCLUSION

While there are many variables and unknowns in the future, the IT Strategic Plan provides a vision and roadmap for the City of Rockville. It provides focus and direction for the coordinated development and enhancement of the City's information technology over the next five years.

It provides practical guidance for responsible decision-making and resource management. It focuses on the entire organization, and its development has included input from staff throughout the organization. Because of its organization-wide scope, its implementation will require cooperative partnerships amongst departments.

Although the objectives of the plan are measurable, it is not always possible to quantify the efficiencies, coordination and collaboration provided by leading-edge technologies. It becomes readily apparent, however, when the technology is not available to help staff operate at a high performance level in providing services and when customers' expectations are not met.

The plan recognizes that technology needs and solutions will change over time, and it provides the necessary flexibility for the organization to adapt. It also recognizes there will be challenges along the way. As a living document, it needs to be reviewed regularly and updated as necessary.

The next five years provide an opportunity to build on the tremendous achievements implemented under the first strategic plan, as well as to explore and implement exciting new tools to improve City operations.

While this plan provides a roadmap for FY12-16, work began in FY11 on several projects that address needs identified in the research for this plan. Some of these lay the groundwork for strategic initiatives projected for FY12-16. Among the FY11 projects are the following:

- Install wireless Internet access at several City facilities
- Implement a talent management system
- Secure an outside expert to examine the City's document imaging and management needs and propose a solution
- Implement a full digital conversion and tapeless workflow for Rockville 11
- Upgrade Microsoft Office to Office 2010 and provide staff training
- Upgrade the City's main data center infrastructure
- Increase Internet bandwidth to support increasing demand by users and projected Cloud-based applications and storage
- Utilize text alert automated dialing systems to notify employees and the public of emergencies and other time sensitive information
- Expand the use of videoconferencing and webinars to reduce travel costs, increase communication flexibility and enhance productivity
- Expand the use of virtual private network (VPN) remote access for employees

- Extend GIS throughout the City and integrate other address-based applications; expand the use of Web-based applications for staff and the public
- Check with end users and departments for hardware/software/training needs

The next step is to begin work on the strategic initiatives funded in the FY12 budget. The IT staff also will begin work on implementing those objectives and strategic initiatives identified for FY12 that call for new or changed practices and policies for which funding is not required.

This is an organization-wide plan, and it requires an organization-wide perspective. To make it a reality, it will take commitment and support from elected officials, senior staff, IT staff and technology users throughout the organization. The support will need to come in terms of priorities, dollars, policies and practices. It may mean making compromises or delaying specific improvements and balancing the needs of specific work groups with the needs of the entire organization. It will take a continued focus on the vision, goals and guiding principles of this plan. It will take patience because all of the initiatives cannot take place immediately. It will take cooperation between various staff and components of the organization. It will take communication within the organization and between the organization and its customers. And it will take flexibility to adapt to changing needs, technologies and resources.

In the 10 years since the City began to implement its first IT Strategic Plan, a great deal has been accomplished in using technology to improve citizen access to government information and to increase employee efficiency and effectiveness in delivering superior services. Today and for the next five years, the City faces a new set of challenges and expectations, and it has the opportunity to meet those using a new generation of technology and new ways of doing business. This plan lays out how the City can take advantage of this opportunity.

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APPENDIX A: GLOSSARY

Application Service Provider (ASP)	An online outsourcing or hosting service for software applications, typically for large businesses with hundreds of users or more. ASP users "rent" instead of buy applications, such as many back-office and e-commerce applications.
Asset Management	Technology and applications aiding organizations in tracking the location, quantity, condition, maintenance and depreciation status of their fixed assets. Fixed asset management applications are sometimes available as a module for enterprise resource planning (ERP) systems (see ERP on page 90).
Bandwidth	A data transmission rate indicating the maximum amount of information (bits per second) that can be transmitted over digital data networks.
Biometrics	A reader or scanning device used to uniquely identify an individual for access management and access control with the most common method using fingerprints.
Blog	Short for Web log, a blog is a type of website that is an online electronic journal usually maintained by an individual with regular entries of commentary, descriptions of events, or other material such as graphics or video.
Business Intelligence Software	A type of application software designed to report, analyze and present data. The software will read or extract data previously stored and is sometimes presented in a "dashboard" format.
Byte	A unit of measure usually used to represent one alphanumeric character. A byte is composed of eight bits of binary data each containing a "0" or a "1."
Chief Information Officer (CIO)	The executive officer in charge of information processing in an organization. All systems design, development, and data center operations fall under CIO jurisdiction. He or she oversees all information technology infrastructure within the organization, and is responsible for establishing information related standards to facilitate management control over all organization resources.

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Client/Server	Client/server describes the relationship between two computer programs in which one program, the client, makes a service request from another program, the server, which fulfills the request. Although the client/server idea can be used by programs within a single computer, it is a more important idea in a network. In a network, the client/server model provides a convenient way to interconnect programs that are distributed efficiently across different locations.
Cloud/ Cloud Computing	"Internet-based computing, whereby shared resources, software, and information are provided to computers and other devices on demand, like the electricity grid. The term "cloud" is used as a metaphor for the Internet, based on the cloud drawing used in the past to represent the telephone network, and later to depict the Internet in computer network diagrams as an abstraction of the underlying infrastructure it represents. Typical cloud computing providers deliver common business applications online that are accessed from another Web service or software like a Web browser, while the software and data are stored on servers. A key element of cloud computing is customization and the creation of a user-defined experience." -- Wikipedia
Collaboration (electronic)	Real time interaction between people via electronic tools that replicate face-to-face interactions and allow individuals and work groups to share and synchronize information at any time, irrespective of location, using electronic workspaces.
Commercial Off-The-Shelf (COTS)	COTS typically describe ready-made software products that can easily be obtained.
Confidentiality	Ensuring that the privacy of information is maintained.
Critical Systems	Software applications or computer hardware that is vital to the smooth operation of an organization.
CRM (Customer Relationship Management)	Technology solutions to manage and coordinate all contacts with customers to meet the customer's needs in an effective and efficient manner. It also provides a database to maintain, monitor, evaluate, and analyze information from customer contacts and organization responses.

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CSR (Citizen Service Request)	An application and process allowing citizens to submit non-emergency requests for service, questions, concerns, complaints, and suggestions. The requests are submitted by citizens using an online form, or via phone or in-person to the Citizen Service Request Coordinator or elected officials. The system allows the request to be sent to the responsible staff and for the staff to respond. The system allows for tracking of requests and reporting.
Cyber Attack	The use of computers and the Internet in launching warfare in cyberspace. These types of attacks are often target government systems.
Dashboard	Generally, a page or window on a computer screen that displays real time information collated from and analyzing various business processes or operations (see Business Intelligence Software on page 79)
Database	A database is a collection of data that is organized so that its contents can easily be accessed, managed, and updated.
Database Management System (DBMS)	Software that manages access to databases. Functions provided typically include database creation, access, security, back up, and recovery.
Data Center	A secure and environmentally controlled facility or room used to house servers, computer components, network and telecommunications components, and storage systems.
Data Mining	The use of sophisticated search engines that use statistical algorithms to discover patterns and correlations in otherwise unrelated data. It is used as a way to find knowledge buried in the vast mountain of information either on the Internet or in a company's own files.
Disaster Recovery Plan	A written document that outlines an organization's recovery strategy, damage assessment, monitoring of the recovery process, and restoration of normal business operations.
Document Management System	A database system that keeps track of stored documents created by a computer using word processing, spreadsheets, other software, or information scanned into a computer. Document management systems can be part of an imaging system as its integral controlling component.
Electronic Commerce (e-commerce)	The buying and selling of goods and services on the Internet, especially the World Wide Web. In practice, this term and "e-business" are often used interchangeably.

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Enterprise	An entire organization or multiple interrelated groups/functions
Enterprise Resource Planning (ERP)	Systems or application suites that provide interoperable applications that handle activities used by an enterprise. Examples of such activities include accounting, procurement, inventory management, human resources, payroll processing, budgeting, and employee self-service.
Fiber-Optic Cable	Cables consisting of thin filaments of glass (or other transparent materials), which can carry beams of light for the purpose of transmitting data usually over long distances.
Firewall	A system designed to prevent unauthorized access to or from a private network. Firewalls can be implemented using hardware or software, or a combination of both. Firewalls are frequently used to prevent unauthorized Internet users from accessing private networks connected to the Internet. All data transmissions passing through the firewall are examined. Those that do not meet specific security criteria are blocked from entering or leaving the network.
Gb (gigabit)	A unit of measure for bandwidth representing one billion bits. (8 bits = 1 byte)
GB (Gigabyte)	A unit of measure representing one billion bytes of data. (1 byte = 8 bits)
Geographic Information System (GIS)	A system of hardware and software used for the storage, retrieval and mapping of geographical data. This spatial system involves linking database tables and geographic features, producing intelligent "layers" of information that can be mapped
Global Positioning System (GPS)	A navigational technology using satellites in space and receivers on earth to provide location and time information of the receiver anywhere on earth where there is an unobstructed line-of-sight between the receiver and an array of GPS satellites. It is often used for tracking and identifying the location of vehicles.
Green Technology	Technology that reduces stress on the environment; e.g., technology that reduces paper use, electrical power use, space use, use of fossil fuels, etc.
Hacker	Someone who tries to break into computer systems, often with malicious intent.

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Hosted Messaging	E-mail and related collaboration services that are hosted by a third party in the Cloud
I-Net or Institutional Network	A private dedicated network built for local schools, business, or government.
Imaging	Imaging is the capture, storage, manipulation, and display of images. In document imaging, the emphasis is on capturing, storing, and retrieving information from the images (which are often mainly images of text).
Infrastructure	The hardware used to interconnect computers and users including communication systems and the software to support these functions
Instant Messaging	Real time synchronized communication via electronic devices such as computers and smartphones.
Integrity	Ensuring that information is in an unadulterated condition.
Interactive Voice Response (IVR)	Part of a telephone system that uses prerecorded voice prompts for callers to input, receive, and pay for information with a touch-tone telephone.
Internet	The Internet, sometimes called “the Net,” is a worldwide system of computer networks – a network of networks in which users at any one computer can, if they have permission, get information from any other computer (and sometimes talk directly to users at other computers).
Internet Protocol (IP)	IP is the protocol that governs how packets of information are sent across the Internet. Every device when it is connected to the Internet is uniquely identified with an IP address.
Internet Service Provider (ISP)	An ISP is a company that provides individuals and other companies access to the Internet and other related services such as website building and hosting.
Interoperability	The ability of different or diverse systems and applications to communicate and exchange data, and to work with each other.
Intranet	A private network utilizing world wide web software specifically designed for workers to conduct internal business.

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Kiosk	Public terminals that offer anything from Internet access to government information to ATM services. Electronic kiosks require a simple user interface and rugged hardware. Often these terminals are equipped with touch screens.
Knowledge Base	A database designed for the computerized storage and retrieval of information about a particular subject, task, procedure, application, etc. An example would be a searchable Frequently Asked Questions (FAQs) database. It is often used as a self-service device allowing the user to find information on a particular subject.
Knowledge Management	Knowledge management is when an enterprise consciously and comprehensively gathers, organizes, shares, and analyzes its knowledge to further its aims. Essentially, it embodies organizational processes that seek synergistic combinations of data, the information processing capacity of information technologies, and the creative and innovative capacity of human beings.
Kronos	The application used by the City to keep track of and report employee work time, attendance and leave.
Legacy Application	An old software system that continues to meet the needs of its users even though newer more efficient systems are available
Malware	Malicious software designed to infiltrate computer systems with the purpose of causing harm.
Metadata	Data that describes other data. Data dictionaries and repositories are examples of metadata. The term may also refer to any file or database that holds information about another database's structure, attributes, processing, or changes.
Mobile Computing	Technologies that allow a person to take a computer and use it “untethered,” using a wireless network infrastructure to provide anytime, anywhere communications, access to information, and transmission of information.
Network	A system that transmits any combination of voice, video, and/or data between users. It includes the cables and all supporting hardware such as bridges, routers and switches.

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Radio Frequency Identification (RFID)	A data collection technology that uses radio waves and electronic tags with chips used to identify items. Unlike bar codes, they do not need to be close and in line of site to the scanner to be read. They can be imbedded within packages. They can store more data than bar codes, and they can be used for identification cards.
Redundancy	In a redundant system, if you lose part of the system, you can continue to operate. For example, if you have two power supplies and one takes over if the other one dies, then that is a form of redundancy.
Relational Databases	A relational database is a collection of data items organized as a set of formally-described tables from which data can be accessed in many different ways without having to reorganize the database tables. In addition to being relatively easy to create and access, a relational database has the important advantage of being easy to extend. After original database creation, a new data category can be added without requiring that all existing applications be modified.
Remote Access	The ability to access a computer or a network from a remote location.
RockNet	A group of volunteers, who live in the City of Rockville, whose mission is to create a closer sense of community using computers and the Internet. RockNet manages a website and e-mail list server, via the City of Rockville home page, and provides information and resources on Rockville businesses, employment, community and religious organizations, real estate, entertainment, schools, libraries, government elections, and local weather, traffic, and maps.
Router	A device or, in some cases, software that figures out how to send information to its destination.
RSS (Really Simple Syndication)	Syndication of Web content, often a notice from an RSS source to subscribers of new information on the website for which the subscriber has indicated an interest in the latest information. Syndicated content can include data such as news feeds, events listings, news stories, headlines, project updates, excerpts from discussion forums, or corporate information.
SCADA (Supervisory Control and Data Acquisition)	"Industrial control systems: computer systems that monitor and control industrial, infrastructure, or facility-based processes." –Wikipedia. Examples of where it is used include water treatment and distribution systems and large communications systems.

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Scalability	The ability of a computer application or product (hardware or software) to continue to function well as it (or its context) is changed in size or volume to meet a user need. It also is the ability not only to function well in the rescaled situation, but also to actually take full advantage of it.
Search Engine	An information retrieval system used to find information accessible on the Internet and on computer systems. The results or hits are typically sorted in order of relevance.
Security	Security refers to techniques for ensuring that data stored in a computer cannot be read or compromised by unauthorized users.
Self Service	Applications or automated services that allow employees and/or customers to access information and perform certain tasks previously requiring the assistance of another person. Examples for employees include submitting applications for reimbursement; updating their personal information; making changes to retirement accounts; submitting open enrollment applications, etc. Examples for customers include registering for recreation classes and programs; paying utility bills; paying parking tickets; applying for a job, etc.
Server	In general, a server is a computer program that provides services to other computer programs on the same or other computers. The computer that a server program runs on also is frequently referred to as a server (though it may contain a number of server and client programs).
Service Level Agreement (SLA)	A contract between a service provider and a service user detailing the nature, quality, and scope of the service, as well as the responsibilities of each party.
Smart Computing	Intelligent IT-supported functions often used in a City environment to control various infrastructure including public works and transportation systems.
Smart Phone	"A cellular telephone with built-in applications and Internet access. Smart phones (also, smartphones) provide digital voice service as well as any combination of text messaging, e-mail, Web browsing, still camera, video camera, MP3 player, video player, television and organizer. In addition to their built-in functions, smart phones have become application delivery platforms, turning the once single-minded cell phone into a mobile computer." -- pc mag.com encyclopedia

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Social Networking	Use of Internet sites to connect with people or organizations of similar interests, relationships, beliefs, knowledge, or interdependency. These sites allow for exchange of information. Rather than a typical website that communicates from one to many, these sites allow for communication from many to many. Examples include Facebook, My Space, and Twitter.
Software	Application software is software designed to perform a specific function directly for the user or, in some cases, for another application program. Examples of applications include word processors; database programs; Web browsers; development tools; drawing, paint, and image editing programs; and communication programs.
Spatial Database	A database management system that not only holds tabular information, but also contains graphic elements in order to represent data spatially. A geographic information system is one of the primary applications of a spatial database (land maps).
Switch	A network device that decides a path on which to send a piece of data to its next destination. A switch usually includes the function of the router.
SWOT (Strengths, Weaknesses, Opportunities, Threats) Analysis	A strategic planning exercise to identify and evaluate internal and external factors affecting an organization, a specific project or venture and its goals and objectives. Strengths and weaknesses are internal to the organization. Opportunities and threats are factors presented by the external environment.
Talent Management	Holistic processes and/or applications for employee recruitment, retention, evaluation, training, development, etc.
Telephony	The technology associated with the electronic transmission of voice, fax, or other information between distant parties using systems historically associated with the telephone, a handheld device containing both a speaker or transmitter and a receiver.
Telework	Working from home or another remote location while maintaining access to and contact with the workplace telephone, e-mail, computer and other systems.
Transmission Control Protocol/Internet Protocol (TCP/IP)	TCP/IP is the basic communication language or protocol of the Internet. It can also be used as a communications protocol in the private networks called Intranets and in extranets.

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Uniform Resource Locator (URL)	An URL is the address of a file (resource) accessible on the Internet.
User Group	An organization of users of a particular hardware or software product. Members share ideas to improve their understanding and use of a particular product. User groups are often responsible for influencing vendors to change or enhance their product.
Virtual Private Network (VPN)	A VPN utilizes a public network such as the Internet as a secure channel for communicating private data. VPN technology allows the creation of a secure link between a corporate local area network (LAN) and a remote user's PC.
Virtual Server	A software application that mimics a physical "box" server. Virtualization allows storage of more than one server on a physical device, the capabilities of which are often underutilized. Virtual servers save electricity, produce less heat, and save other operating expenses. They also take up less space.
Virus	A virus is a piece of programming code inserted into other programming to cause some unexpected and, for the victim, usually undesirable event. Viruses can be transmitted by downloading programs from other sites or be present in an e-mail attachment. The virus lies dormant until circumstances cause its code to be executed by the computer.
VoIP (Voice over Internet Protocol)	Rather than using standard telephone lines and technology to transmit voice communications, VoIP converts voice communications to data packets to send over converged voice and data networks.
Voice Recognition	A voice recognition system has the ability to receive and interpret dictation or to carry out spoken commands. The most powerful can recognize thousands of words. Voice recognition implies only that a computer can take dictation, not that it understands what is being said.
Web Hosting	The function of housing, serving, and maintaining files for one or more websites. Web hosts offer super-fast connections and easy access to the backbone of the Internet.
Webinar	An online live, interactive seminar or conference allowing listening, viewing, and commenting by many people from different remote sites using their individual computers and phones.

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Wiki	A website that allows users to collaboratively create and edit content and interlinked Web pages using a Web browser and a simplified markup language. Wiki is derived from Wikipedia, an online encyclopedia that allows users to create, edit, and add to topical content.
World Wide Web (WWW) (aka Web)	A computer network consisting of a collection of Internet sites offer text, graphics, video, animation, and sound using the hypertext markup language (HTML)

APPENDIX B: ERP OVERVIEW

One of the highest priorities in the strategic plan is to address the City's enterprise software needs. One approach is to use integrated enterprise software, which is commonly known as enterprise resource planning or ERP software. The City has an ERP system for financial and HR related functions (see background below), but also uses a number of stand-alone systems, for permitting, work order and other systems, which also is known as a "best-of-breed" approach. Several key software functions are using stand-alone systems, which inhibits the free flow of communication and information thus creating data silos. This also makes it extremely difficult to assemble or gather data for reporting and analysis and for user account management and security. Furthermore, it places significantly more demands on IT staff who have to support multiple computing platforms for each stand-alone application and it causes confusion for users who have to learn how to use multiple applications with dissimilar user interfaces and functionality.

An ERP system that encompasses all of the major functions within the City allows for a much greater degree of interaction and helps eliminate these data silos. There are at least a handful of vendors that have an extensive number of modules specifically engineered for local government. These modules incorporate nearly every major functional software element that would be needed for a typical City, and they would allow for streamlined reporting and communication. Additionally, an integrated system can make it feasible to provide real-time performance information and other key indicators presented in a graphical format ("dashboard") on the PCs of managers and supervisors. Most systems typically have business intelligence software that not only provides dashboards, but, also, comprehensive reporting across multiple functions.

Implementing a comprehensive ERP system is a major undertaking and cannot be taken lightly. It will require significant dedication of staff resources by departments and IT staff. A successful implementation hinges on full cooperation of these staff, full support of upper management and a strong project management discipline to manage such a large project.

Before committing to a full-blown ERP system, it is in the City's best interest to conduct a request for information (RFI) process. With the information received, the City can make a decision on how to proceed and issue a request for proposals (RFP).

The ERP industry can be divided conveniently into three tiers. The top tier has seen significant consolidation over the past ten years and now is composed of two major vendors, SAP and Oracle. These systems are typically used in Fortune 500 companies and some larger governments. The systems are typically priced in the tens of millions of dollars and are extremely complex to manage and support.

The second tier is largely composed of financial/HR (human resources) system-only vendors. These vendors also can have fairly complex systems that can be very costly to implement.

Some examples of these systems include: CGI-AMS Advantage (City's current system), Famous, Lawson, etc.

There is not as clear of delineation between second and third tier vendors. Some of the third tier vendors are government specific and offer a more comprehensive array of government functions. Some of these include: Tyler-Munis, New World, and Pentamation-One Solution software.

Other Local Governments' ERP Use

A brief review of what other governments in the area are using for ERP systems include the following:

- Annapolis – Tyler-Munis
- Bowie – Tyler-Munis
- District of Columbia – Oracle/Peoplesoft
- Fairfax City – SunGard Pentamation
- Fairfax County – SAP and Oracle
- Gaithersburg – Tyler-Munis – Financials Only
- Hagerstown – Tyler-Munis
- Montgomery County – Oracle

Background

Enterprise Resource Planning or ERP systems are organization-wide software systems that combine the core functions of the organization. While many software vendors will classify their software as an ERP system, many do not offer functions beyond financial and HR related applications. This is the case with the City's current ERP system, CGI-AMS Advantage. The City uses the following core functions or "modules":

- General Ledger
- Accounts Payable
- Procurement
- Inventory
- Human Resources
- Payroll
- InfoAdvantage (report writing)

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The City has used the AMS Advantage ERP software system for more than 20 years. The system originally was implemented on an IBM mainframe and was a text-based system. In 2003, AMS announced that it would no longer be supporting the mainframe environment in the future, and that a Web-based system would be replacing the text-based software. In 2006, the City made the upgrade of the financial system to the new Web-based environment. In early 2008, the HR system was upgraded, and the City's mainframe was no longer used for production systems.

AMS has additional core modules that expand financial and HR systems. The City has considered implementing a performance budgeting system and an employee self-service system. The performance budgeting system would allow departments to enter and submit their budget requests directly within the AMS module. The budget module would generate budget documents ready for publication directly from the system. The employee self-service module provides the capability for employees to enter their open enrollment information electronically, and they also can update their contact information and print their direct deposit pay stubs.

While the Finance Department is generally satisfied with the AMS-Advantage ERP, nearly all other departments are dissatisfied with the ease of use and functionality. In the focus groups and in the employee survey used to help form the strategic plan, the feedback was negative. Many users complained about how difficult it is to use and how complicated it is to perform basic tasks. Examples include entering requisitions or completing budget transfers. While training was mentioned as a need, the functionality and lack of user friendliness of the system was of a greater concern.

Other City of Rockville Enterprise Software

Utility Billing System

The Revenue Division within the Finance Department uses a legacy utility billing system to generate bills and process payments from over 13,000 water customers. The system also has a Web-based payment system and an automated bill-pay option.

Permitting/Code Enforcement/Licensing

The City has used Accela Tidemark Advantage for permits, code enforcement, contract inspection, trade licenses, and animal licenses since 1993. The system fully supports a total of 65 case types. In addition, the system also uses Accela Wireless, which gives inspectors in the field access to the permitting system. An interactive voice response (IVR) system from Selectron is also integrated with the Tidemark Advantage software to allow the public to schedule inspections by phone. Econnect is another module of the permitting system, which provides web-based access to the public to check the status of permits and applications.

Work Orders

Public Works uses the Infor Hansen work order system to track work requests. This system has been in place for more than 12 years.

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Citizen Service Request
The City IT Department developed a custom Lotus Domino-based workflow application that allows the public to enter service requests through the City's website and the council support specialist then uses the system to assign and track each request. Weekly reports are generated and sent to the Mayor and Council. One of the senior staff discussions on the draft strategic plan focused on the shortcomings of this system in its inability to coordinate and communicate information between departments, sometimes resulting in duplication of efforts or not knowing another department's relevant actions.

Recreation Registration System
The Recreation and Parks Department uses CLASS software to process registrations for recreation classes and programs. It is also used to track memberships at the Municipal Swim Center and various community centers. Key components of this system also include an IVR system to register via telephone and a Web-based registration system.

Police Information System
The Police Department uses the Crimestar database system to track public safety related data that's not part of the County's report writing system.

Refuse System
Public Works uses Route Manager, to track service requests and complaints for refuse customers.

Considerations
While we believe the benefits of an expanded ERP system for the City will increase efficiency, communication, analysis, and decision-making, they do not come without some potential drawbacks, among them:

- Significant staff time in preparing requests for information and requests for proposals, and in analyzing offered solutions
- Reluctance of some key staff to change. For example the Finance Department completed the upgrade to the latest Financial and HR systems within the last six years.
- The possible need to make compromises in some of the modules offered by the vendor versus better or more desirable stand along software offered by other companies
- Significant time and effort by IT and other staff in designing and planning the change
- Significant amount of time for data conversion and entry
- Significant staff time working with the vendor to implement and test the new system
- Significant training for primary users, end users, and IT staff
- Significant time in post-deployment assistance for users

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Research suggests the following criteria are among those to consider in deciding between a "best-of-breed" approach and an ERP approach:

- Functionality: does the ERP system provide the necessary functionality? If not, is it available in a stand-alone system?
- Ease of integration: how difficult and expensive is it to integrate the best-of-breed application(s) with the ERP system?
- Upgrading: how would the integration of best-of-breed applications impact ERP upgrades and migrations to new ERP releases?
- What inefficiencies are caused by a best-of-breed approach?
- What efficiencies and other core business objectives can be met with an ERP system?
- What are the demands on IT staff of a best-of-breed approach versus an ERP approach?
- How can each approach be used with the Cloud if the City desires to use the Cloud?
- What is the business risk? Will one approach leave the City unable or hampered in meeting its business operations, processes, and goals?
- Which City business processes and operations are most important to the success of the government?

Next Steps
Funding for enterprise software is included in the proposed FY12 budget. It is anticipated that the following process would be followed:

- A committee will be formed with representatives from City Departments.
- An RFI process will begin where vendors will have the opportunity to provide information and demonstrations to the committee and other City staff.
- It is anticipated that a consultant or contract employee will be hired to serve as the project manager for this project
- An RFP would be developed based on RFI findings and the needs of departments
- The ERP committee would evaluate proposals and make a recommendation for award of a comprehensive ERP system or one that would not include the replacement of the City's Financial and HR systems.
- A two-year implementation process would begin which would require significant involvement of all departments and IT systems analysts and systems support staff.

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